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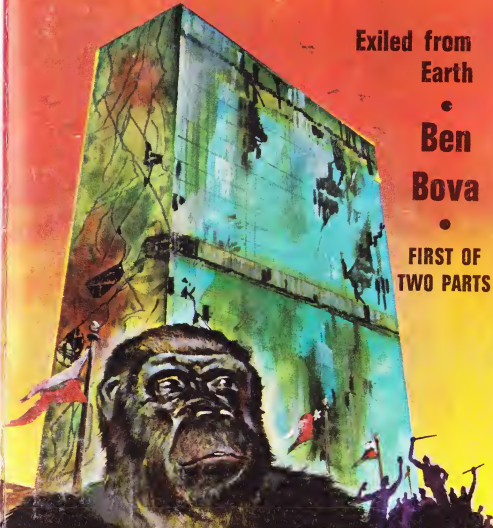
•
**Ben
Bova**

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FIRST OF
TWO PARTS

Galaxy

The Best in Pertinent Science Fiction

January, 1971 75¢ MAC



Ph'nglui mglw'nafh Cthulhu R'lyeh wgah-nagl fhtagn!



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Galaxy

SCIENCE FICTION

MAGAZINE

ALL STORIES NEW



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WEALTH

"Unless you can provide evidence that there is definitely, genetically, absolutely no difference of intelligence between black and white—and between people with different kinds of noses—we have no choice but to accept the difference as a possibility. I am using regular scientific reasoning."

The above is from one of the more quotable letters I'm still receiving on the subject of race and intelligence, briefly touched upon here some time ago under the headings: *Brain Pollution* (*Galaxy*, Nov., 1969) and *Skintelligence* (*Worlds of IF*, Dec., 1969) Missives that begin: "Who do you think you are to—" I ignore. When, as and if I write my autobiography I will do so for money and it will be the traditional pack of lies. You might enjoy it but I will not do it for free.

But the problem with the "scientific reasoning" advanced by Mr. Scott Edelstein of Silver Spring, Maryland, and cited above is that no rigorously scientific definition of intelligence exists or has been given general acceptance. So that to postulate today "different kinds" of human intelligence based on skin color or other physiological variations is putting a cart before a colt that has yet to be foaled.

That there is a correlation between heredity and intelligence—or what

may be ascertainable about intelligence—is conceded but imperfectly understood by geneticists. And nothing in the available data suggests variations based on race in the kind and quality of human intelligence. The pertinent genes have not been identified among the 10 million or so comprising the human genome—but *any* combination of genes can be found in *all* the races of man.

Accredited IQ tests do not measure intelligence but merely the presumed attributes of intelligence in a given cultural context—e.g. the prestigious Stanford-Binet system is designed to measure capacity to learn in the Euro-American white culture. But a tested subject, retested after a lapse of several years, may show variations up to thirty IQ points—without having changed his genetic makeup or switched races. Genetics only partly affect present IQ scoring—the rest is demonstrably environment. In the black-and-white context, Army IQ tests have shown Northern blacks outscoring whites from certain Southern states on the average.

More recent studies by Dr. Irwin Katz of New York University have amassed further evidence that environment and motivation dramatically affect measurable functions of what we call intelligence.

Whatever human intelligence eventually proves to be—if it exists at all—it should in the light of present data and needs be considered wealth. As such it should be cultivated and mined—not pursued into what seems to be a blind alley of genetic bias.

—JAKOBSSON

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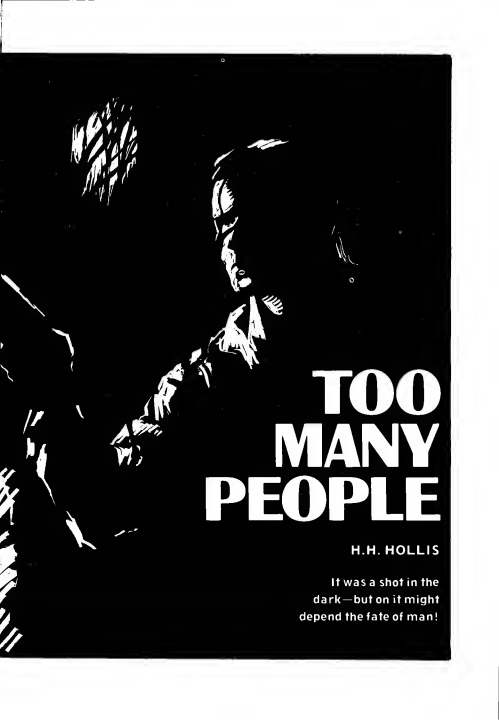


Harper & Row

1817

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TOO MANY PEOPLE

H.H. HOLLIS

It was a shot in the
dark—but on it might
depend the fate of man!

"KILL—kill it—"
 "Look for a patch of white, Jake, and fire into it."

Yacov HarShawkor found himself in a nightmare when he returned from the New Delhi conference. Charles Perry handed him a loaded M-16 as they ran. Heavy handguns roared around the two men. At the lab compound, floodlights flared in uscless brilliance. Here, in the dark of the South Indian interior plain, there were only running feet, harsh cries in Tamil and English. "There! Shoot, shoot!" and laboring breaths as they pursued the escapee from the laboratory.

"What's white, Charlie? What am I aiming at?"

"Mary's hospital gown! She got out."

Yacov came to a full stop, clutching the carbine. My god, he thought, Mary. A week ago . . . and Charlie expects us to kill her. He's loved her all these years and he wants to kill her. For what? Yacov knew and was cold all through with the knowledge.

"Charlie—" he yelled at the running figure ahead. "You got a stable vector for the virus?"

"Yes, ycs," Charles groaned as he slowed. .358 Magnum clutched in his right hand. "Yes, and Mary has it—but the process is not stable. We have to kill her. Do you think I relish it?"

They stood very close, breathing with the deep shudders of men not often called to sustained physical effort. "Yes," Yacov said bitterly. "Yes, I think you do, you jealous—"

"No. You don't understand. We can't control the virus in a female. That's not Mary out there. It's the end of the human race." He pointed the handgun. "I'll kill you, too, if I have to; but I'm going to burn Mary's dead body tonight; and afterwards I'm going to cremate the ashes and the dirt where she falls."

Yacov never knew what might have happened as each stood with the other's death in his hand; a half-mile ahead of them in the black night shots rang out near the bank of the broad river. Shouts of triumph overlaid a wavering scream of pain and terror. In a moment the wiry Indian major-domo of the great laboratory ran back to them.

"She is dead, gentlemen. Dr. Subchundrum is looking for a boat to see if the crocodiles have left anything. I believe I hit her—and I know Dr. Subchundrum did. I saw her stagger just before she went over the bluff, I am sorry."

The searchers at the river brought back nothing. For the rest of the night three scientists sat in the ascetic mess hall of their laboratory, passing the station's lone bottle of gin back and forth and mourning the loss of Mary

Braden, with whom each had been in love at some time and in some fashion.

Memories were traded like snapshots, each serving for a moment to hold off from the three the actual deadness, the nonexistence, of the woman whose life had been entwined with theirs. The mutual magnet which had swept them all together as students was a consuming interest in the mechanics of population control. At a great Boston university, Patasayjit Subchundrum, Charles Perry and Yacov HarShawkor—known to his friends as Yankele—had made a wheel of intellect and adolescent lust revolving around Mary Braden's passionate involvement in the struggle of heart and head for a policy by which humanity could live on the planet Earth without eating itself.

ATTENDING what all had expected to be a dreary bore of "getting to know your faculty," they met at the home of one Professor Hoogert.

"Ecological balance," Hoogert said, "is not long denied."

He said so to old students and new. He said so in class and out of it. On this social occasion he said so to his four young guests. And they accepted the words as the axiom on which to build their lives.

"In the generation before mine," Hoogert also said, "your grandparents and great-grandparents

wore the scar-that-couldn't-be-seen. They all believed hunger was just around the corner. In your generation, even Mr. Subchundrum, who comes from a country where famine is still real, is somehow unmarked by fear. Although millions of people have starved in India in the last decade, we all feel that in some way the problem of hunger is going to be solved."

Subchundrum, a thin, ravishingly handsome young hellion with a skin the color of sandalwood and the dark brown eyes of a fawn, rose to the invitation.

"Well, Doctor, famine disturbs one more as one approaches becoming a participant in it. For people who cannot grow grain and cannot get grain and have indeed forgotten what grain looks like, it is a more gripping experience than for a scholar who is living in the land of the obese."

Dr. Hoogert had grimaced. "I don't feel guilt. I have not chosen that any should starve—and no mouthful of food I might deny myself would add one calorie to the diet of a Calcutta slum dweller."

His wife murmured, "No, but it might smooth out that unsightly paunch." She deftly whipped the cake plate from her husband's elbow and placed it in front of the young Indian student.

Mary Braden, hair hanging over one eye, spoke then in the diffident manner on which girls of her

generation relied to disarm opponents. "Oh, I see what you mean, Mrs. Hoogert—it isn't our personal food intake that helps or hurts the starving. But food is so important in our society—more important than sex, really—that if we could just bring ourselves to the point of general self-denial we might generate a political solution to the food problem. Another famine might never be allowed in India or Brazil."

Mrs. Hoogert shot a sharp glance at Mary.

"More important than sex? Pooh, only a virgin would make a remark like that."

"Well, my dear," said Professor Hoogert, "if I have to choose between a fat paunch and a fat head, I'll just keep my little corporation. I think you've made Mary blush. I think the state of Mary Braden's virginity is a subject which must be pursued elsewhere. Mary, my dear, do you think that *any* division of the world's food supply would suffice to sustain the teeming millions?"

He smiled at her.

Mary Braden shook her head. "No, I mean that if people here voluntarily felt the edge of hunger, it might stimulate them to solve the problem."

Subchundrum said seriously, "Yes, but there is some evidence that the blind response of our genes to hunger itself stimulates the pressure to breed. Starving people

produce more offspring than well-fed people do."

"So? Make birth-control a legal concomitant of marriage," Charles said. "When Mary and Yankele wed, they ought to be assigned a quota. Any more and crunch! No food for anybody in the family."

Mary impulsively leaned over and put her hand on Yacov's. "We might be relied on—but people who are hungry every day? I don't think they can be counted on to be rational or to obey quotas. We ought to find out."

Yacov's hand turned up and tightened on hers. "Marriage doesn't equal children. Children require marriage to protect them through the plastic learning period. But they don't need it to be born. Or to go hungry."

Charles laid his hand on top of theirs. "Shall we make non-reproduction a three-way pledge? Oh, sorry." His eye fell on Subchundrum. "Four-way, if you like?"

Subchundrum smiled. "I abstain, as my ambassador often does at the UN. We preserve later freedom of action in this way."

Professor Hoogert was preserving his own freedom of action by stuffing a pipe. He spoke while puffing the tobacco alight.

"It isn't a bad thing to recognize—that—birth control—is not likely—to come—from simple plans—like marital abstinence. Some compulsion is needed, eh?"

He glanced around the circle. "Yes. Well. Just so. I have caused the four of you to meet because each of you has betrayed some interest in the population problem. I hoped each of you would start a chain reaction in the other three. As a catalyst I seem to have performed my function."

"He means," his wife said, stroking the back of his neck, "that he is a spent catalyst."

"**S**IR," said Charles, "you never told us what you feel is the distinguishing mark of *your* generation. After all, you're handing down the problem."

"Why, we are the fulminate of war," Hoogert said. "Strike one of us and see the mushroom cloud. We sought peace in murder and found another of the paradoxes of history. We killed more people in our years than the whole human population of the world had been five hundred years earlier, yet we leave earth more crowded with human animals than when we began to kill. So we have led directly to you. This world cannot tolerate the numerical dominance of any one beast at our level. Ecological balance is not long denied."

"What are we?" asked Yacov, looking around at his three contemporaries.

"Cannibals. In the most literal sense. You will eat yourselves if a valve for population pressure is not found or fashioned. This is the

great fact of human life which marks and will mark every one of you."

Yacov and Mary looked at each other.

"Cannibals?" she murmured dreamily.

"Valve?" asked Charles Perry. "You don't say solution, or reduction. Valve?"

"He means," Subchundrum said, "that there is more than one way of relieving a pressure."

"More than that," Professor Hoogert said. "I want to make it clear that I think man is still an evolving animal. Whether we take the position that, having evolved the brain, man has come to the end of his individual physical evolution and can hope to progress only by social evolution, by the elaboration of societies better adapted to the needs of humanity; or that there is still significant genetic change in man's future—either way the pressure of population is important. It is one of the factors leading to physical evolution by the vast exchange of the gene pool and its exposure to the forces of mutation; or it is one of the factors to make us use our brains to invent the more human society which may lie in our future. What you must seek in your generation is a way to control population pressure in helping to determine man's future."

"Of course," said Yacov, "everybody knows all we have to

do is get every nation up to the level of affluence of the great industrial nations and the birth rate falls."

Mary Braden said, "Mexico? Gross national product rising every year, population rising at a steady four percent right with it."

"Well! it just hasn't gone on long enough. Give them a generation."

"Thirty years?" asked Subchundrum. "In thirty years, even if we could reduce *my* country's annual rate of population growth to one and a half percent, we should have eight hundred and fifty million people. At the current rate of better than three percent, which is likely to endure, our population in the year two thousand will be one billion people."

Professor Hoogert nodded. "So where's the valve?"

Charles Perry laughed. "Well, it's just a matter of finding it. Some simple mechanical way that the most ignorant will use to inhibit conception."

Yacov shook his head. Mary said, very seriously, "But if we did find a mechanical way—the pill is controversial but effective and the plastic loop is simple and cheap—how could we persuade people to use it? For some people known methods are painful or frightening or anti-religious. How do we get over all those hurdles at once?"

Charles replied, "Lock the food supply to contraception. A woman

would have to show proof she's using one method or another in order to get her family's issue of food for the month."

SUBCHUNDRUM snorted. "Charles, forgive me. You are a child of industrialism, of close-living populations already managed in so many ways that one more won't matter. Everybody in the United States is trained to mass transportation, mass work places, computer use. The dial telephone alone conditions every American to mass utilization of computers; and the keeping of computer records, in credit, in school, in public agencies, trains ordinary citizens not to cheat and not to forget to do the things that make the computer tick: include this portion of bill with your check, return this stub with questionnaire fully filled out, check every answer either yes or not—do not fold, spindle or mutilate. I know the following is hard for you to visualize but try to get hold of the idea that sixty percent of Mexico's people live in villages of fewer than a thousand souls; eighty percent of my people the same. Try to accept that such people are both ignorant and sly and that they have a cultural tradition that rule-breaking can almost always be fixed by an uncle or friend with influence.

"Such people lose count honestly. They forget what the

count means; if they're following the rhythm method, they can't remember which day is safe and which isn't; or they think the act of counting makes the process safe. If they're using pills, they mismatch days with pills and destroy the effectiveness of the cycle of pills. They lose the strings of beads we give them to match the count. They lose the pills themselves or one of the babies swallows them and mother is ashamed to admit it and ask for more; or the distributor only comes to the village once a month or once a quarter.

"All these things happen just by the human carelessness of people in a peasant culture. But people don't expect to be punished by starvation just for making a human error in a count. You can't hook food supply to pill usage. In the first place, neither my people nor yours would accept it. They'd simply revolt, if it were really enforced. But it couldn't be enforced. One married woman would just share food with another, knowing that next month the need for sharing because of a little counting error might be the other way around."

"My God," said Charles, "what an impassioned speech. You nearly make me believe the problem can't be solved."

"No, he doesn't mean that," said Yacov. "And he hasn't even touched on religious objections to the kind of inhumane coercion you

proposed. He means it takes more than good will and more than technical ingenuity to get the job done."

Mary asked, "Do you mean that it takes more even than compulsion?"

Subchundrum looked at them all with something deep and dark struggling for expression in his red-brown eyes. Then he shrugged, as if he were unable or unwilling to put into words what he felt.

II

IN THE shifting social life of a great university and a great city, Charles and Yacov squired many young girls to the theater, to dances, to protest meetings and picket lines—all the rich variety of American student life in the 'sixties. Mary Braden worked her way through a score of admirers outside their circle; but as the undergraduate years slid swiftly by, more and more of her time, even outside class and lab, was spent with Yacov or with Charles—or with Subchundrum, although he ostensibly removed himself from sexual competition early in the game. Back home in Kerala awaited the bride to whom his parents had plighted his troth when he was six years old.

In senior years, even their continuing and deepening interest in the population problem could not

prevent their being drawn into different vortices of scientific specialization; but their separation in discipline drew them back together to exchange and enrich each other's ideas. The childless home of the Hoogerts became their home. At various times, one or more of them boarded there.

Once, when Mary was living with the Hoogerts and the other three had come over for Sunday night supper, they examined plastic loops, various small shapes of molded nylon and polyethylene which inhibited conception when placed in a woman's uterus. The theory was that intra-uterine devices were painless and could remain in place for years. When the time came for the planned family, they could be removed at once without side effects and without further inhibition of the process of reproduction. Mary flung down a sheaf of statistics purporting to indicate that the IUD was less effective in underdeveloped countries than in highly industrialized ones.

"LOOK at that, Subchundrum!" she said. "In the southern part of India the damned things are said by women to be painful. The body processes expel them. Even when they're in place, they don't work as well as they do in the United States. How can that be?"

Charles leaned forward, his arm

around Mary—he was the favored one that semester—and picked up one of the devices.

"Maybe women in India just don't accept the idea."

"Superstitious, you mean?" asked Yacov, lying on the floor, his feet up on a chair.

Subchundrum laughed. "Superstition is involved—but European superstition. You people from big industrial countries believe a smooth, molded piece of plastic can do anything; so why should it not inhibit birth? My people know it is painful and unnatural—so they expel or remove it."

"Yes," Mary said, "I can see that. The real point is that, objectively, it's effective and pain-free. Now how do we educate the women of underdeveloped countries to know that?"

Subchundrum glowered. "Objective human experience is white, temperate-zone, college-educated experience. You still believe that, don't you? All you pink ones, you just can't get outside your own crippling, anti-human culture to understand that any other human culture is just as valid as yours."

"Oh, come on, Sayji, that's not the implication, meant or unmeant." Yacov sat up and rested on one elbow, feet still in the chair. "It is a problem of education. It's hard for people in a village who never see more than a thousand other persons in their lives to understand that by doubling *their*

number, they're doubling three and a half or four billion more. It is a problem of education."

Subchundrum stood up. "I could say that too many girls are being born and are growing up to child-bearing age so quickly and in such illiteracy that we can never reach them by any process of education. But I'll just say good night." The door slammed behind him before anyone could move. He was back the next week, however.

MONTHS later, the picture was the same, except that Yacov sat next to Mary and Charles was leaning back in a chair, noisily grinding an apple to death. Pata-sayjit Subchundrum was bearing down on the destructive role that free will played in their joint interest.

"So long as we expect people, by some act of will, to overcome the deepest instinct of life, we are simply whistling in the dark. People are not going to cut down their own reproduction when it always seems to be someone else who menaces the world. We are running right into the most basic human urge."

Charles said, "But Sayji, human beings are more than any bundle of instinctual drives. What has made us human is our ability to suppress animal drives for long range goals."

"Yes," said Mary, "but those long range goals have always been

the good of the immediate family—or at most of the tribe or nation."

"Nationalism is tribalism," Yacov declared.

"Even in Israel?" asked Subchundrum.

To which Mary replied, turning protectively toward Yacov, "Yes, even in Zionism; but that's a different situation. Israel is the carrier of the modern tradition. The sheikdoms that surround her are still in the middle ages."

"So!" Subchundrum cried. "That gives the Israelis license to outbreed their neighbors? Eh, eh, Yankele?"

"Oh, hell, no. But the situation is special."

"All situations are special," Charles mused as he worked the last shreds off his apple core.

"Right." Mary sat up out of the circle of Yacov's arm. "That's why the whole emphasis of the struggle has to be on education. We've got to make people want to have fewer children. But how?"

"Or can we?" asked Subchundrum. "Can we, in time? You all scoff, more or less, at the efforts of my government; but we have ten times as many lecturers holding clinics and demonstrating the pill, the loop, the rhythm method, as any other country. We offer people the choice of method and our demonstrations are convincing because they are conducted in slums, country and city, where waves of

children with big bellies and sad eyes are always washing around the ankles of the women in the audience. We educate the men, too, but what measurable good does it do us? We may be slowing down the rate of increase but we are hardly denting the increase in absolute numbers. Every time you eat an apple, Charles, another thousand Indians begin to wail and starve."

Charles licked his fingers. "I say what Hoogie told us a long time ago. No use appealing to me to eat less. That won't stem the tide of hunger in Madras."

"Yes," said Mary, always fair. "You're right. You're right, in our terms. In terms of the whole problem of human population on the planet earth, you're wrong. Animals react to starvation pressure by dropping more cubs. So do human beings."

Yacov said what one or the other of them had said a thousand times. "Human beings *are* animals. To that extent, instinctual drives do move great numbers of people. Unless we can educate them all to stand against those drives, we can never hope to correct the upward curve of the population figures, never, never."

GRADUATION came, degrees and honors, graduate school, jobs in separated corners of the world. Subchundrum invited them

all to be his guests in Mexico at a conference on population control methods, sending out a round-robin letter in which he hinted broadly that he had found a new method, and that it might be *the* method.

When they all assembled at Subchundrum's country home in Cauhtla, he teased them first with mysterious glances, insisted on two rounds of tequila sours and then began, inexplicably, to reminisce about his boyhood in Kerala, at the tip of the Indian subcontinent.

"Cauhtla is like home in many ways. The mountain elevation is homelike and the sweaty hand of the tropics, so much more felt here than in Cuernavaca, three hundred meters higher, also makes me feel at home."

Yacov said, "Sayji, I flew five thousand kilometers to get here and left my two last classes of the semester to be taught by my assistant, a young woman of such monumental stupidity as only American university politics could saddle me with. I can't stay for the whole conference. Tell us about your new chemical agent and let's get to the testing."

"You think it is chemical?"

"Well, you're working for the largest producer of synthetic hormones in the world. Makes sense that your research ought to benefit your employer some way."

Sayji chuckled. "You ought to know someone raised in Kerala

would not have any slavish adherence to the idea of profits for the employer. And this is a Mexican employer. The outfit can only fire me for cause—and pursuing a line of research that will not benefit the corporation is not cause."

Mary went to him, laying her gold-tanned hand on his mahogany wrist. "Come on, Sayji. Don't tease us. What have you learned?"

He set down his drink. "I have learned that chemical control, in the sense of some compound that will do all our work for us, is not within our grasp now. There is something stirring in the back of my mind, you understand, but it's not even to the writing-down stage, not even to playing with the mathematics of the cell.

"Chemical this is, yes; but—I am almost ashamed to say it—very American, very European. Not at all the sort of life-oriented chemistry you have a right to expect from me, dear ones. Here it is." He dropped a handful of small plastic shapes and a larger one, something like a baker's pastry tube, on the cocktail table that had been carved from a whole tree. The white plastic shapes lay in an ugly sort of pattern on the dark wood of the table.

Charles was the first to comprehend. All three thought through the tequila, at first, that the loop shapes were significant; and while they were handling them and

realizing it was the same old collection of toroids and helixes that were supposed to inhibit human conception, Charles suddenly picked up the icing tube shape and began to work it, with a sheepish grin.

"By God, I thought of this once but gave up too soon. It's an applicator, isn't it? You don't need a doctor to make the implant."

"Yes," said Subchundrum, "so what?"

"Oh," said Yacov. "It's foolproof, is it?"

"Is anything?"

Mary said, "Well, Sayji, is it or isn't it?"

"Foolproof? Oh yes, it's *fool* proof. But, of course, it isn't fools we have to deal with."

Charles broke in. "It works, though? The woman can put the loop in place and remove it without the necessity of a doctor's or a midwife's helping her? Sayji, this is the breakthrough of the age. Every teenage girl in the world will want one as soon as she hears about it."

Subchundrum laughed in the way they had come to know meant he was embarrassed. "Yes, of course—*when* she hears about it and can afford the few pennies or her government can afford the few pennies or—"

"Or what?" Charles was ready to start the manufacture of the applicators at once.

"Oh, I only mean that we still

face the problem of making these teenage girls—real teenage girls in villages and cities where the teenagers are not like the ones in your middle-class American head, Charlie—want *not* to be mothers. Women want a child, or two or three children. They just don't want too many, that's all. But what number becomes too many? If you have three, four are just as easy to care for. And if child-bearing and child-rearing are really the only honorable courses open in life to a girl child, why should she practice this trick? What's in it for her as a person, not just as a point on a statistical curve?"

"Well, education—"

"Mary, Mary!" Subchundrum whirled on her. "What about yourself? You've stretched adolescence as far as even an American girl can. Well, Doctor Braden, isn't there something else you want from life? How long will you resist your deepest desires?"

Mary sat down with great deliberation. Charles and Yákov looked at her quietly and speculatively. She set her glass down on the tiled floor and then fixed Subchundrum with a direct and unsmiling stare. "Sayji, is this a proposal? What about the girl in Kerala?"

"Call it a proposition, if you like. I am as cool as you."

"Are you just demonstrating something?"

"Perhaps I am. But you will

have to find out what it is that I am demonstrating."

The evening was ruined and the discussion died. Dr. Subchundrum's enthusiasm, which had assembled them all again, had curdled in the heat of his own doubts about the device, and in something Mary's presence had called out of him, something so far from the control that had marked him in their student years that Yákov and Charles could only shake their heads as they drove back to Mexico City.

Mary remained. Neither she nor Subchundrum ever told the other two whether she was there for days or for months. No child came of it; but as for the new device, Sayji's doubts proved well founded. It was one more weapon. It was a long way from being *the* weapon.

A YEAR or two passed. Mary's postcards bore a Boston postmark. Subchundrum had been working in a laboratory in Holland. They were all in New York at a conference and evening found them in Yankel's suite with their shoes off and drinks in hand. Yákov was spending government money that year, and declared that his motto was, *Live a little*. He waved a glass to take in the opulent suite and all it implied.

There was a fifth wheel, a physicist who had been in school with them, blown into their group that night by a chance wind. He

had a wry, studious sort of humor, so they had kept him with them after dinner, made him attend a seminar with them, and now they were all talking about anything and everything in the world except their consuming interest, of which they were all heartily sick for the moment.

The physicist commented on that. "Whatever happened to all those dirty stories the four of you used to tell?"

"Dirty stories?" asked Mary in her direct way.

"Well, all that talk about genitalia and the economy of the uterus would have been dirty stories in any other gang I ever hung out with."

Mary lounged back against Charles' shoulder and he snorted. "That's the thanks we get for trying to keep this cluck from being up to his hip pockets in human embryos. Trailbreakers are never understood."

"Ahh," said the physicist, "you're not trailbreakers. You *talk* dirty, but you're afraid to face up to the only radical solution possible now. Several of the most populous nations on the face of the earth need to take a twenty-five or thirty-year vacation from having any children at all."

"That's a solution?" Yacov asked lazily. "That ain't even a statement of the problem."

"Sure it's a solution. All the children born for the next ten

years in India, China, Indonesia, Mexico, Southern Italy, the Balkans and the whole Mediterranean shore have got to be sterilized at birth."

The collective howl was the payoff he had been playing for. The physicist chuckled, wiping Yankele's drink off his shirt, even as Yankele continued to shout.

He said, "But isn't that really what you ought to be working for? Isn't that what you want? It's certainly what I want. I'm willing to have it start in my generation."

"You've got two children, you goddamned white genocidist!" Charles cried.

"Okay, okay, don't get hot. Sterilize my two kids. I don't think much of my genetic inheritance. Hell, I haven't even got a Nobel and I'm looking forty in the teeth. Sterilize all my neighbor's kids, too. I'm generous. And I'm really a hell of a lot more altruistic than you fakes. This would solve the problem? You're just working to make it only a *little* worse each year."

Subhundrum grinned like a tubby shark. "All right, I'm not angry. I think you're right. I'm a member of the Cabinet in New Delhi. Now, Mr. Prime Minister, after you have given me *carte blanche* to put this solution into effect, give me also the political campaign which will make it acceptable to my people from Kashmir to Kerala. Just give me a

formula that will keep us from being toppled from office before we carry out ten years of emasculations and hysterectomies on new born babies. I'm listening, really I am."

The physicist said, with interest, "Subchundrum, are you really in the cabinet?"

"No, you idiot. I'm working in Holland. I haven't been home in so long I have no idea what the politics are now. I'm posing you a hypothetical situation. Now give me the answer—because there has to be an answer. If you can't give it to me, then don't make easy solutions. Go get the eight-fold way back down to one-fold and leave us alone with our clumsy human problems."

"Oh hell, Patasayjit, I'm like the owl that told the arthritic centipede to change himself into a mouse so he'd have only one twenty-fifth as much pain. I don't know how you're going to do it. I function only on the policy-making level. The tactics and the hardware are up to you."

They all agreed, after he left, that he was disgusting. Now, years later, could they honestly say that line of thought had not influenced them?

THEY turned over another couple of pictures—failures that had brought them down the road to this desperate success. The morn-

ing-after pill, which a turn of Mary's research into hormone control had made infallible, had faltered on the basic shortcoming of all plans that required voluntary use of the inhibiting agent. Human beings found ways to forget, reasons to forget—even many a comfortable American husband, confident that his wife was taking the infallible barrier to conception, suddenly found himself a father.

In the poor countries the researchers were defeated over and over by the bedrock fact that children are wealth in a culture of poverty. Not only children starve in a famine—old people who have no children to fall back on starve as well. Fear and love and the genetic memory of a time when man was a naked minority among mammals all combined to edge the total number of human beings in the world over four billion, toward five billion, six billion, toward cannibalism.

Yacov led them through the last illusion: vaccination.

It was simply impossible to make people want anti-birth vaccination, just as it had been impossible to make people want the twenty-year time pill, another brilliant group of researchers had thought was the answer. The twenty-year time pill was at least measurable. Taken at 18, it opened the door to parenthood at 38; but it never became a popular

arrow in the quiver of attacks on human fecundity.

Vaccination, the process by which a woman was made immune to male sperm, or a man immune to his own sperm, so that he ceased to produce a viable seed, had all the residual irrational human opposition to vaccination to overcome, as well as one quality which made it hard for propagandists to push it. The vaccine's effect was variable. For some people it was lifetime immunization. For others it was extremely short-lived—and the duration proved to be unpredictable.

But the exchange of ideas and research among the four old friends on the relatively unproductive subject of vaccination led Subchundrum at last to the greatest discover of their lives.

The turn came when he sent word to Mary, Charles and Yacov. "Come to Kerala!" Subchundrum wrote. "I have the money from my government, a free hand to build the labs I want and, best of all, I have the approach!" Two pages of cell mathematics followed. The mathematics were what drew them.

"All wrong, darling," said Mary as she stepped off the plane, "but so provocative!"

III

THE machines that were to change the four investigators

from passive inhibitors of the birth process to active interveners in that process were already fixed in the main laboratory. Two massive micro-manipulators had been modified to perform chromosome surgery.

Charles gaped and then smiled. "These let us get right to the innards of the cell, hey? I suppose you can even repair LSD chromosome breakage with this, right?"

Subchundrum seemed to have gotten younger, to have regained the calm confidence of their undergraduate days. He had certainly become thinner again. "We can work even on virus mechanics with these things and that is where we shall be working."

Mary smiled and shook her head. "Dr. Subchundrum, you have flipped your autoclave. The steam has all escaped. The differences between human cells and viruses are so great that if we elucidated all the knowledge there will ever be about viruses—a hundred years' work, say—we would still not be much closer to solving our problem of humanely keeping down human populations."

Charles kicked a lab table with a dirty sneaker. "That's right, Sayji; or at least, it seems to me right. Have you discovered some affinity between viral structure and human cell structure hidden from the rest of us?"

Yacov smacked Charles mightily on the shoulder. "None so blind

as cannot see, eh, Subchundrum? I see it because I was the responsible executive on the vaccination project. The affinity between human cell and virus is that viruses like to live inside human cells."

Charles rubbed his upper arm. "Sure, but those are diseases. We don't want to infect the whole human race with some plague."

"Don't we?" asked Mary. "Don't we? Why not? I see, Sayji; you've built on the work of the researchers who have used viruses to create a *beneficial* infection."

"Beneficial!" cried Charles. "What illness is beneficial?"

"My dear, many a woman has welcomed a week of flu. For the price of a little fever and nausea she can drop ten pounds at a fraction of the price and effort it would take in a salon."

Yacov picked it up. "More to the point, Stanfield Rogers and his followers have already demonstrated that a virus deadly to one animal—Peyton Rous' chicken sarcoma virus, for instance—is just a harmless passenger in man. Rogers showed that the Shope virus, which makes cancerous tumors in rabbits, suffers a benign conversion in man's bloodstream, where it elaborates a special form of the common enzyme, arginase. Haven't you read some of his work?"

"Sure," Charlie said musingly. "The bacteriophage, the virus that eats bacteria, is itself the agent of

the toxin in diphtheria. Only those diphtheria bacilli which have inherited a particular strain of bacteriophage make the deadly toxin. Other strains are nearly harmless. I knew that."

Mary spoke. "And somebody, I forget who, has been looking for a virus that would be silent as to disease but would manufacture the missing enzyme that will let retarded children be as normal ones." She snapped her fingers. "Who's doing that, Subchundrum?"

"Never mind," Yacov broke in, "it doesn't matter. The point is we can start with a viral disease which often does cause sterility and modify it to produce the sterility without the sickness. Wait a minute, though, Sayji, how are you going to get people to hold still for inoculations when they won't accept vaccination and the twenty-year time pill?"

"Ah, you have missed the important point. The lesser aspect first: we don't need inoculation to circulate a virus, once it's implanted. The practical effect of Salk showed that. After an extended period of administration of the Salk vaccine, supplemented later by the Sabin preparations, a new child who moves into the area of Salk protection catches the immunizing virus from the other kids instead of the crippling, sometimes fatal wild strain of poliomyelitis. And of course, nobody ever has to be inoculated to catch

flu or polio. The virulent strain of the nineteen-eighteen influenza spread itself—and eventually died out itself, squeezed for existence by the sickening but infrequently fatal strains we have to deal with every winter.”

“All right. The lesser aspect is pretty good. Now tell me number two.”

“It’s really a corollary or extension of number one, but it means the breakthrough that finally lets our work become meaningful. We don’t need anyone’s voluntary consent to put this into effect.”

“What?” cried Charles. “How the hell do you get ’em to take it if you don’t have consent?”

Mary said, “Dear idiot, you haven’t been listening to sweet old Subchundrum. He proposes to infect the whole human race. Sayji, love, Hitler was a piker to you. How do you propose to reverse this mass castration? I still haven’t had *my* child, you know. I’m interested.”

PATASAYJIT SUBCHUNDRUM smiled and waved his hand at the functionally beautiful micro-manipulators. “To the machines, children. What we have to construct is a virus that is obedient to some kind of command. I don’t know the answer. But now—and frankly for the first time,—I know there is an answer.

This cannot be a dead end, as so much of work has been. We cannot stop with a virus that produces sterility—nor with one that might ultimately destroy the human gene pool.”

“Right,” said Mary. “It’s somebody in Roger’s group who’s working on the mental retardation enzyme. Some of the children who fit the classification of retarded are so because they have a genetic disease, phenylketonuria. Their bodies don’t elaborate phenylalanine hydroxylase, which the brain needs for normal function. The virus gardeners are trying to breed a mutation which will be a silent virus otherwise but will produce the missing enzyme.”

“Exactly,” said Subchundrum. “I do not propose to wait for mutations induced by cosmic rays or even by plasmas. I propose that we rework the genetic codes of some virus to make it remember a bias against human birth; and at the same time, to leave it subject to easy defeat when we get ready to license a birth from a particular man and woman.”

“First the infection and then the examination of the whole human race to determine who shall breed?” Charles asked. “That’s rather godlike, isn’t it?”

Sayji answered with a twinkle. “Hindu gods can do all. They are not dead and they are not in Argentina either. Come, come, to work!”

WITH some misgivings, they all set to work: Dr. Subchundrum was bothered more than he cared to admit by the ethical implications of the research. As long as success was not quite within their grasp, however, he could put off the final accounting which would bring him to the decision of whether and when to unleash an anti-birth infection upon the world.

Mary Braden and Subchundrum were the genetic surgeons of the team. They had a delicacy of manipulative behavior in their hands and eyes that was lacking in those of Charles Perry and Yacov Har-Shawkor. It fell to Yankele and Charlie to do the mathematics and program the computer analogues which screened the manipulated viruses, and to handle the breeding experiments that tested the few altered viruses the computers found promising.

What all had expected to be the big hurdle was cleared within months. It proved to be almost easy to create a virus that colonized male testes and killed each sperm as it grew. What seemed to be impossible to accomplish was to make the virus itself viable.

A virus could be defined as a cell stripped of nonessentials: a hippie cell, Mary had said. There still was a nucleus, so to speak, but the organism had deprived itself of all those attributes which ordinarily go to independent functioning. Viruses could reproduce

themselves and live within host cells. During most of their life cycles they depended on the cell wall of the host for protection—and it was only if the cell wall collapsed because the cell had died—or the virus had killed it—that a virus needed to wrap its essential components—its genetic ability to reproduce—in some sort of film for the migration to another cell.

The mutated, rebuilt viruses Doctors Braden and Subchundrum found it easy to turn out lacked one essential feature of self-protection. Instead of being parasitic, able to live off a host, kill it and drift in a little inner space-ship to another and enter it, they were symbiotic. Living within the sperm, they thrived. When that life killed the sperm, the squatter virus died with it.

Dependent to the end.

The problem was one they did not seem able to solve. "No exit," Charlie snarled one night at dinner. "We're going to be right here—footling around with submicroscopic particles of memory chains—when the solid wave of humanity breaks over those mountains and rolls us into the Indian sea. There isn't any answer—only the problem. Krishna or Vishnu meant the human race to end in race suicide. Dinosaurs died. Dodos died. A million years from now, there'll be some tiny bipeds hiding under leaves, left over from our age the

way iguanas are left over from the reptilian. Damn!"

No one could oppose him, except with faith. "Faith!" he spat. "Faith in the scientific process? Like those poor devils with the ear troubles from monitoring static from the stars? Pfui!"

Nevertheless, they continued to work, without much apparent enthusiasm but the dogged care of professionals. Even Charles was patiently methodical about his computer programs and methodically cursed lab assistants who let sperm cultures die of neglect or, finding one dead, threw it out without trying to understand how it had been killed.

IT WAS Subchundrum who realized at last the essential natural element they were leaving out of the ecology they were trying to construct for their mutated virus.

"Most diseases we think of as virus diseases," he said to the others one gray morning when he had woken with a headache and an idea that vanquished his headache, "are not transmitted directly from one person to another. They are *vectored*."

"Yes," Mary said. "An insect or another animal serves as a conduit. Rocky Mountain spotted fever is carried from a sick individual to a well one by a mite. Typhus is vectored through lice."

Charles spoke. "For some

viruses the movement through a carrier is an essential part of the life cycle. Maybe that's true for our little old sperm-killer. Let's start the testing with fleas. They're easy enough to find."

So the search began. It was wide-ranging, in depth, relentless—and unsuccessful. Fleas of every variety were tried and found wanting. Mites rejected the virus as if it were an inert protein particle. The blood of rodents destroyed it. To birds it was a quickly dissipated intoxicant. No animal could be found to transmit the tiny killers back into man's bloodstream in effective form.

A vigorous attempt was made to render the virus pneumonic, so that it could be allied to influenza and transmitted rapidly by sneezing, coughing and kissing. The virus particles simply fell out in such passage. Nothing revealed the artificial nature of Subchundrum's virus more than this: it could only be made effective by inoculation. The anti-birth virus seemed for a long time to be just another dead end.

The project lost its *élan*. Workers began to leave for glamorous projects elsewhere with more pleasant surroundings and better prospects. Many went to other silent virus programs that were trying to eliminate mongoloidism, premature births and childhood leukemia.

"It's not bad enough," said

Yacov, "that they leave us. In a sense, they go over to the enemy."

Mary finally made the suggestion that became the core of the team's last joint operation. She was no longer diffident, as she had been when they first met; but this suggestion was timidly put forward one Saturday afternoon when they were brainstorming the problem.

"Fellow doctors, perhaps we have been approaching the question of a vector for the virus in a manner too restricted to allow the answer to be seen. We have been thinking of transmission from man to man via some other species."

Subchundrum said, "That's the way all vectored viruses work. Man-mite-man; man-flea-rat-flea-man; man-mosquito-man. What are you getting at?"

Mary patted the back of her hair. "Just that man as a species isn't all male. *Woman* is also man. We've concentrated on male-species-X-male, forgetting that many diseases, particularly genetic ones, pass man-woman-man. Maybe that's the natural passage we've been seeking for Subchundrum's virus."

MARY spoke on a Saturday afternoon; but neither holidays nor weekends on a regular basis were recognized in Subchundrum's biological laboratory. Within an

hour all four scientists were at work. Within a week, the vortex of their activity pulled in the rest of the project personnel.

First Subchundrum and Braden had to structure the inheritance pattern of the virus to affect the mice who were the starting point of their experiments *in vivo*. The computer work and the breeding experiments had to follow. Then the living particles had to be modified to repeat their sterilizing migrations in the monkey colony; and last, the great step of infecting human beings had to be undertaken.

At that moment, Yacov had been compelled to leave for a week's conference in New Delhi, not to reveal what Subchundrum's project was doing, but to see what he could find out of any other project that might aid the virus research. He learned nothing, except that the great thrust of research was still to find *the* method which should be so simple, so cheap and so foolproof that earth's breeding billions would overnight adopt it. The ethical, religious, emotional and economic blocks that might keep even such a remedy from being adopted were still being dealt with on the slow, agonizing basis of education and propaganda.

Yacov HarShawkor had taken the plane out of New Delhi in a mixture of depression and excited anticipation. He was depressed be-

cause there had been no hint that other groups were aiming in the same direction as Subchundrum's. He was excited because he hoped his colleagues had succeeded. Yacov knew that great discoveries in this day and time took place almost in parallel because of the instant exchange of ideas in the scientific community and the immense sums available to research. Like war, research had become a stable and calculable contributor to the gross national product of many countries.

But, he thought, we haven't published. Maybe others also have failed to publish. One hated to fail in a grandiose design. And yet, no one could be really comfortable about a remedy that stepped over the line from persuasion and voluntary use to compulsion and involuntary infection.

Ah, well, I'll get a nap and when I get back to the lab compound Sayji and Charlie will shrug and tell me this line didn't work, either. We'll let the governments face the ethical problem when we have the gun in our hands.

H E HAD walked off the plane into the nightmare of hunting Mary Braden down. Now Subchundrum and Perry were explaining to him the imponderable and unpredictable way in which the last experiment had exceeded the level of success.

"It's enough," Perry said, "to make a man believe in a directed universe. Since we decided a human female would be the vector we've hardly done anything that missed. Every step of the work has gone like greased lightning."

"Why not?" asked Subchundrum. "We have become experts."

"Yes," said Charles, "but it's all been better than expert. I'm remembering what Hoogie used to say: 'This world does not tolerate the dominance of one animal at the level man has reached.' I tell you, it seems as if some great principle has pushed us on; and having Mary, or the focus of infection Mary became, loose on the world would have brought the human race to an effective end in this generation. I mourn Mary; but thank God we killed that carrier of the virus. Now we've got to start in and rework it."

Subchundrum spoke. "It was that errant fireball."

"What?" said Yacov. "Talk sense. Speak paragraphs. Remember you're trying to teach me something. Attack it in an organized way, will you?"

"Well, you know there's a station about twenty miles away, up in the foothills, where they are doing plasma research. Those fellows don't say, but I think they're trying to make a genie for war—some way of binding a plasma with its hard radiation in a brass bottle you could unplug in

an enemy's face or in his factory. They're up there where they can tap the hydro-electric plants for all the power they need; and they're using it by the megawatt."

"So?"

"So last week, right after you left, they lost a fireball. A great globe of lightning wandered around here all night, flickering, looking in windows, perching on rooftrees, playing tag with us all over the place.

"We were all ready to go with a batch of virus the three of us had vetted. Mary and I had decided—and we persuaded Charles—that the three of us should test the vector pattern. We thought some of the hard radiation that lightning ball hurled off might have got at my deadly babies. After all, in glass they're as vulnerable as fish in a barrel."

"What did you do?"

"All three of us, Yacov—all three of us—went over the batch with the electron microscope. I swear none of us saw a genetic stutter in the bunch. We were still wrong to use that culture. I've incinerated the rest of the batch in an electric crucible."

"Right, Sayji. That's what you should have done in the first place. In a culture of billions, examination of a few thousand left a whacking great statistical possibility that you wouldn't see a major mutation."

"Yankele, we were all in a fever.

That's the truth. Mary cast her vote yes, too."

"Fever is right—you killed my girl with it."

CHARLES spoke up, soberly. "Yacov, she was your girl for this month, maybe last year. You know better than to think it would have lasted forever. We've all been Mary's 'one man' many times. She loved us all and we all loved her and the time has gone by when any of us could be jealous of her favors. Sayji and I killed her, sure; so did that fireball, so did she and so did you."

"All right, leave it! What happened?"

Charles spread his hands. "It worked, that's what happened. We've got the answer in our hands, as soon as we can attenuate the effect of the virus on the female vector. *That* effect was a wild, unpredictable thing that we've got to control. Sayji and I are as sterile as two eunuchs; but it killed Mary."

"How?"

Subchundrum spoke. "The first leg of the vectoring as accomplished between Mary and me under proper laboratory conditions of sanitation and observation. Then we gave it forty-eight hours for the virus to multiply in her bloodstream, before she effected the transfer to Charlie."

"And then? Was she healthy up to that point?"

"Absolutely. Temperature, pulse, respiration, blood count, odor, urine, all just the old Mary we knew. You tell him what happened next, Charlie."

"We left the lab room where we had been, with all the instruments for recording the conditions under which the transfer took place. I walked her to her quarters. I went on to mine, took a shower and dressed. In about twenty minutes from the time we left the lab she phoned me. 'Come over here,' she said.

"When I walked in she was still wearing the robe in which she had left the lab. Yacov, she just took it off and came at me. I thought—for about half a minute—of whether this could affect the experiment and then forgot it. When we finished I put on my pants and shirt and laughed. 'Okay, Mary,' I said, 'now I have to shower again and get back to work. I'll see you at lunch.' All I had noticed was an increase in temperature. She was like an oven, but I thought—oh, well, you know. Fifteen minutes later she was out on the compound."

"Nymphomania?"

"Something more," said Subchundrum. "Something elemental, Yacov. She was like a tornado. I

don't suppose there's a man on the station she didn't sterilize. We had to sedate her and feed her intravenously. And tonight she evaded us anyway."

Yacov stood. "We have to finish this now. We've got to find the cure—or the method of attenuation of the virus. We've got to protect the women in the villages around us from the men who work here. I'll stick to the end; but I don't want either of you to say a word to me that isn't business; and when it's over, I don't ever want to see or hear either of you again." he turned and strode out.

IT WAS four days later, just as they readied a new strain, that news of the outbreaks reached them from the villages five and ten miles away; two days later the first epidemic reports from New Delhi—and ten days later the postcard came airmail from New York.

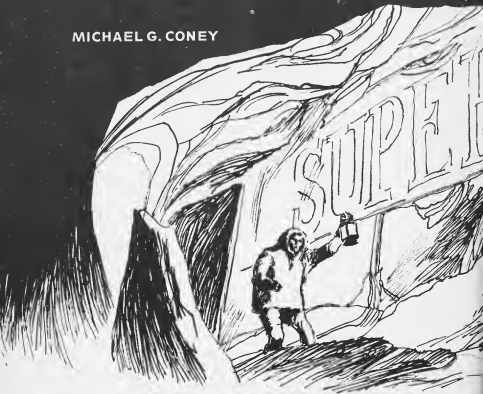
As Yacov read it tears started from his eyes; but whether they were tears of relief, of love or of fear, he could not have told. In familiar handwriting, the postcard's message was:

"Flesh wound in shoulder healing nicely. Ecological balance is not denied. Wish you were here. Mary." ★

Some day the glaciers must
come again—bringing another
Ice Age and changing the
course of evolution!

SNOW PRINCESS

MICHAEL G. CONEY





SLEEP had been spasmodic; the night had been punctuated by the staccato of gunfire above the wailing of the eternal wind.

"For God's sake go and see what's happening, Jacko," Cockade had whined petulantly, snuggling closer to Switch who humped in his sleep, muttering.

Resignedly Jacko had struggled out of his sleeping bag and mounted the ladder to the gallery which circled the inside of the church spire. He had patrolled the circumference of the narrow platform, staring out through the crude gaps punched through the tiles, fingering his rifle. He had seen nothing; the shots had ceased. Flesh-hunters pursuing some unlucky traveler, he had decided, shivering as the wind-borne show furred his cheeks.

Below, Cockade had waked again. "How the hell can we sleep with you tramping about up there?" Her voice was querulous. Already she had forgotten the purpose of his patrol.

Carefully, Jacko descended the ladder. The fire glowed low in the huge, upturned bronze bell. Cockade and Switch were sleeping once more, huddled together in reluctant interdependence. Beyond, the dim hummock of Shrug, snoring softly.

Jacko felt a surge of protective pride. These were his people, his

tribe. He loved them, didn't he?

IN THE morning Shrug joined him on the gallery.

"Something happened last night? Cockade's gone sour again."

"She heard gunfire." Jacko gazed out across the tossing snowfields. The wind never ceased to blow; today it was stronger than usual, sifting the surface of the snow past the spire in a flowing sea, driving across the buried village. The spire, a defiant finger of drowning civilization, was the only landmark in the silver wastes. "I should have heard it myself. I was asleep."

"And we might all have been killed!" shrilled Cockade's voice from below, a vinegar condiment to the aroma of frying bacon.

"Oh. I didn't hear anything, either." Shrug's eyelashes were heavy with snow as he stared through the hole; he blinked wetness. "Flesh-hunters, do you think?"

"I suppose so. Maybe we ought to mount guard at night again," Jacko speculated reluctantly. The guard would consist of himself and Shrug. Cockade and Switch had their private fears; they shrank from the gray Outside.

"Or perhaps we should move on—once the Snow Princess is finished." Shrug raised his voice on

the last word for the benefit of the two cooks below.

"Breakfast is getting cold."

"Coming." The two men descended the ladder. Jacko first, a tall figure in a stylish black overcoat; then Shrug, smaller, squat and ragged.

Switch watched them from beside the fire. "Get you some new clothes today, Shrug," he offered, friendly, hoping to bridge the endless gulf between the two factions of the community.

"Let him get his own." Cockade spoke automatically, forking bacon into her mouth.

"I can, you know."

"You never could."

Switch tried to change the subject.

"You think the flesh-hunters came from the north?"

"I was in the ice corridors a month or so ago," Shrug defended himself. Idleness, not claustrophobia, chained him to the bell tower.

"Yes, blind drunk."

Jacko sighed. They all knew Cockade was unable to climb the ladder; was scared sick of the snowfields and the open sky. So she attacked Shrug endlessly. It was her defense.

"Please be quiet, you two," Jacko said patiently.

"I haven't had a drink for weeks." Shrug's mouth was distended with bacon.

"Like a pig. He eats like a pig.

Drinks like a fish. God, what an animal."

"I want you to pick up some sailcloth while you're down in the corridors today, Cockade." Jacko spoke quietly; Cockade took her eyes off Shrug. "We'll be needing sails soon for the Snow Princess. Do you think you can do that?"

"How's the boat coming along?" asked Switch.

"Fine. Another few weeks or so and we'll be all set to go."

Switch stared into the fire. "You say it's—enclosed. I mean, we won't have to be in the open? Like a house on skis, you said. You did say that, didn't you, Jacko?"

"Like a house on skis," Jacko reassured him. "All covered in."

"Just outside the spire?"

"Behind that wall," Jacko pointed. "We'll knock away a few bricks and you can crawl right in. No problem."

"Oh." Switch chuckled mirthlessly. "I'm not scared of the outside. But Cockade—you know."

The girl looked up from the fire, her eyes an artillery of contempt.

SHRUG walked along the ice corridor, his lamp flinging jagged shadows on the rough-hewn walls. Occasionally the rays would meet a directly reflective surface beyond the range of the pool of light and Shrug would see, in the ebon distance, an answering lamp glowing. And he would stop, heart pounding, waving his

lamp about until the far-off image disappeared. Shivering, he would then walk on. The tunnel was narrow, the roof low—a vein in an infinite body of dead life.

Shrug was imaginative. Shrug was scared.

As he walked he distracted himself with speculation as to the present nature of the small community in the tower.

Two deaths, not so very long ago, had reduced their number from six to four.

Cockade, it seemed, was unable to have children.

The purpose of the community was survival.

Ergo, the community was failing. It needed an infusion of life. It must increase by recruiting new members.

The word SUPERMARKET, distorted by ice, danced in the light of his lamp as he trudged by thoughtfully.

A month or two, or maybe a year ago, Jacko had conceived the notion of the Snow Princess to give drive to the group. Shrug was not happy about the Snow Princess. The more he considered it, the less it seemed a good idea. One day the Snow Princess would be deemed completed.

And then?

Shrug screamed with terror, his voice multiplying back down the tunnel. A man stood before him, upright and regarding him, unblinking, through a thin wall of

ice. As Shrug jerked the lamp, it seemed the man winked, slyly.

The man smiled enigmatically at Shrug. He was immaculately dressed in a dark suit. He was tall and slim.

THE wind caroled through the taut rigging of the small, open snowboat. The single triangular sail strained forward as Jacko left the lee of the spire and raced across the snowfields in search of fresh meat. He veered and headed east, at right angles to the line presumed taken by the fleshhunters the previous night.

As he sailed he considered again the various factors involved in the construction of the Snow Princess.

COCKADE and Switch were discussing the Snow Princess as they prepared to descend to the ice corridors.

"I can't understand why we spend so much time building that boat," Cockade grumbled. "Now he wants a sail. Why leave here at all, that's what I want to know. Eh, Switch?"

"The canned food can't last for ever," her lover replied gloomily, for the joy of disagreement.

THE snowfield was perfectly flat, an infinite expanse covering what had once been comparatively hilly terrain. The snow was white and the sky was white and

the surface flowed with the wind. It was difficult to judge distances; the occasional landmark would appear suspended in mid-air. Jacko maintained his sense of direction by reference to the wind which had blown from the same quarter for as long as he could remember.

• He came upon the men unexpectedly, about an hour after leaving the spire. A group of skiers, shoulder-sails spread, beating aslant the wind and diagonally toward his own course. He watched warily as they approached. He reached for his rifle, easing out the sail. He aimed to pass some fifty yards ahead of them. The craft drove on, the snow hissing gently under the flat hull.

"Hi—you!"

He ignored the cry, surprised that it was not accompanied by the usual fusillade of shots. Fleshhunters were catholic in their taste for meat.

"Not that way—." The shout came faintly to his ears as he swept by.

They were warning him about something. Surprised, he let the sail fly loose and the boat slid to a halt. He turned and looked around, suspecting a trap, but saw only the retreating backs of the fleshhunters, shoulder-sails taut as they made speed against the wind.

The snowboat rocked, almost imperceptibly.

Jacko turned to face forward

again slowly, cool fear trickling down his spine. The sail, flapping loose, snatched the rope from his fingers.

A Pad stood at the bows of the boat.

Over nine feet tall, it leaned forward, huge legs astride, clawed forepaws resting on the prow. Its silver fur was matted with driven snow. Its jaws were parted slightly, baring sharp teeth in a caricature of a confidential smile.

The face of inevitable death can often be amusing.

At the Wine Lodge, in the buried village, hung a bright poster. A ruddy, benevolent bartender leaned his arms on the counter, smiling. A tankard of amber beer stood at his elbow. The caption read: "Meet your friends in the local pub."

Jacko giggled hysterically as he prepared for death and the tears of mirth turned to ice on his cheeks.

Still smiling, the Pad began to beat its forepaws on the snowboat, gently at first, then violently, like an idiot child.

Then it reached down, gripped the keel, and threw the craft upward and backward, a gesture of bored rejection.

Cold and darkness closed over Jacko. The upturned boat lay covering him. To his right was a strip of gray daylight. He saw the huge splayed feet of the Pad, planted patiently as it waited for him to emerge.

SHRUG pounded up the tunnel, the lamp swinging wildly, his sense of direction lost as he put mindless distance between himself and the immaculate, living corpse. He sobbed as he ran and in the whirling, flashing reflections from the ice-walls the man was everywhere, materializing in each trick of the light, in each irregularity of the crudely hewn ice, recreated endlessly by the fertile fears of Shrug's own mind.

The floor was slippery as he stumbled on, feet flying, and suddenly the man was before him, bathed in light, face distorted and terrible, racing toward him madly. Shrug screamed again as he tried to stop, to turn, failed, and crashed into the unyielding arms of his own reflection.

He lay on the cold ice, shuddering, feeling his heart thudding against the hard floor. The lamp was out, the dark tunnel silent apart from the harsh echo of his breathing.

After a while he moved, felt around. He was at the dead end of an abandoned tunnel.

His fingers, groping, encountered a smooth cylindrical object. Exploring farther, he found more.

Months ago, fearing for Shrug's sanity, Jacko had hidden the entire stock of the Wine Lodge.

Presently Shrug drank.

The wine was comforting. It was familiar. Soon Shrug found himself weeping, thinking of his

mother. He felt it was despicable that he couldn't remember what she looked like.

JACKO'S hand encountered the stock of his rifle lying half buried in the snow. Grasping it, he wriggled forward under the upturned boat, fighting his way past sacking, ropes, canvas, away from the feet of the waiting Pad. Before long it would occur to the beast to pull the boat aside. Jacko didn't want to be around when that happened.

The short mast of the snowboat had been driven vertically into the snow; he had no way of telling whether it was broken. Kicking his feet free from entangling ropes he crawled under the gunwale near the bows, forcing himself deeper into the soft surface, partially concealed by the driving mist of fine snow which whipped across the snowfields. His clothing was saturated with deathly cold.

He stood up clumsily, bringing the rifle to bear as his feet sank into the yielding surface.

The Pad's head swung around. It was about fifteen feet away, near the stern of the snowboat.

It regarded him. Its gaze slid down to the rifle and back to his face.

Trembling, Jacko hooked his numb forefinger around the trigger.

There was something about the

Pad's eyes. They stared into his, willing him not to shoot. The eyes were small glowing orbs in the huge silver-furred face and they held an expression not wholly animal.

Jacko fancied there was an evil intelligence behind the eyes.

The rifle barked, flinging him back from his insecure stance. Struggling up again, he saw the Pad collapsing slowly, ponderously into the snow, a dark stain pumping from its chest. It watched him, all the way, until its head dropped and was finally still, a silver island in the white, drifting sea.

Jacko crawled back to the snowboat, dragged boards from beneath the hull, stood on them, thrust his fingers under the gunwale and heaved, grunting. The side of the boat lifted a foot or so, then stuck, held by the buried mast.

Beyond, white shapes approached, unhurriedly.

Fear pumped adrenalin through Jaco's veins. He lifted again desperately, pain flaring in his back. The craft hesitated, then rolled upright, spilling snow. He leaped in, seizing the ropes, hauling the sail tight, jumping and bouncing frantically to unstick the snowboat from the clinging snow. Slowly, very slowly, the craft slid forward. He remembered his rifle, made a grab for it and missed.

The giant, shaggy shapes were all around him, lumbering for-

ward intently, converging in united hatred. He jerked the ropes fast and stood brandishing a stick, striking at the razor-sharp claws as they swung. He kicked at the tiller as he fought, steering a jagged, rocking course through the pack. A blow from an enormous paw smashed him to the floor of the boat. He huddled, his arms about his head, waiting.

After a while he raised his eyes and looked out over the stern. Some thirty Pads watched him motionlessly as the wind drove the snowboat to safety. Shuddering with reaction, he steered a wide arc and made for home.

A new factor had entered the fight for survival. The Pads had begun to hunt in packs. Once solitary prey for his rifle, they had now become aggressors.

II

COCKADE and Switch trudged along the ice corridor, dragging the supply sledge. They halted outside the supermarket, left the sledge and climbed through the shattered plate-glass door. In the light of their lamps the cavernous interior looked bleak and uninviting; most of the shelves were empty and the floor was littered with torn cardboard wrappings. They shuffled through the mess to the storeroom at the rear of the shop.

"There's not a lot left."

"Salmon," said Cockade, dragging a case from beneath a pile of rubbish.

"Tomatoes. Didn't the Old Man teach you to read?"

Cockade pondered and eventually remembered the Old Man. Once a passive, if instructive member of the community, he had been dead for several months.

"Jacko killed the Old Man," he said.

"Jacko tried to save the Old Man. You wanted to kill him."

"Did I?"

"You said he was a parasite."

"Well, I was right, wasn't I? If we'd killed him there would be more food here now," Cockade pointed out.

"The Old Man taught us a lot."

"What good has it done you?"

Cockade kicked around dispiritedly, shuffling among the piles of empty cases for something edible.

"I know that's tomatoes, don't I?"

"What's the difference? We'll eat it just the same— It doesn't seem there's anything else here. We'll be hungry tomorrow, unless Jacko's got a Pad."

Switch felt the recurrence of a nagging worry which had gradually intensified over the last few weeks.

"What about the day after tomorrow?" he asked.

She looked at him. In the glow

of the lamp her thin face looked vulpine. Switch shuddered privately at her expression and his hand moved involuntarily toward his knife. "We'll find another supermarket," she said and suddenly she was Cockade again, his lover, helping him collect the supplies as she always did. Switch relaxed.

"Let's look right away," he suggested. "Some of those old tunnels that were here when we came. We've never explored them properly."

They left the sledge loaded with the single case of tomatoes and set off down the corridor, past the succession of doorways.

"I wonder where Shrug is," Switch speculated.

"I think he went to the tailors. Not before time, too."

They paused at the entrance to the tailors. The ice had been chipped away around the door; the windows were opaque. As Cockade swung the lamp to peer inside she giggled suddenly.

"Look at that, Switch!"

A tailor's dummy stood in the window, tall and beautifully clothed, smiling fixedly, an entombed dinosaur of ancient fashion.

"Do you suppose Shrug will look like that when he's finished in here?" The thought of the filthy, bearded Shrug impeccably clad in shirt, tie and lounge suit was too much. Cockade laughed aloud, a

jeering resonance in the confined space.

Grinning, Switch accompanied her into the shop. For a while they poked around, examining clothes, exploring the changing cubicles. Ugly cracks in the walls bore witness to the pressure of ice outside.

"He's not here." Cockade voiced the obvious.

"Funny."

"I don't think there are any more food shops along this way, either. Let's get back."

Switch was about to agree when the situation struck a chord in his memory. Shrug had been lost in the tunnels once before and Jacko had been furious when he had arrived back at the tower to find that no search had been organized. Added to which, they had found very little food. Switch did not relish facing Jacko in the present circumstances.

"Maybe we ought to look around a bit more," he suggested.

"Shrug is a parasite," said Cockade. "But Jacko would want us to look for him. God knows why."

"We might find some food at the same time," said Switch.

THEY lifted Shrug to his feet and held him while he vomited, moaning.

"Dirty drunken bastard," Cockade grumbled.

"Saw a man watching me from in the ice," Shrug muttered.

"Like the Devil, he looked, white and smiling. Oh, God—" He hunched over again, retching.

"A tailor's dummy." Switch chuckled. "He was scared by the tailor's dummy." Long ago Switch had had a similar experience.

Shrug looked up. His face was pallid and sweaty. His eyes were bloodshot. "That was no dummy I saw," he insisted. "His eyes moved— I'm sure they moved." But he wasn't sure, now. His head swam dizzily; he had an urge to drink himself unconscious.

"Let's get back to the tower, for Christ's sake." Cockade was impatient. She renewed her grip on Shrug's arm and Switch grasped him from the other side. The lamp slipped from Switch's hand, clattered to the floor and went out.

"Bugger it," muttered Switch in the sudden darkness.

Shrug whimpered. "Damn, I can't see. My eyes—I can't see—"

"Shut up. What the hell have you done, Switch?"

"I've dropped the lamp, of course. What the hell do you think?"

"He's dropped the lamp." Cockade's voice was acid with sarcasm. "Nothing to worry about. It happens all the time. Tell me, Switch, how do you suggest we get back? I mean, you're in charge of operations now."

There was a pause before Switch spoke. "It seems to be

broken. It won't go on. Wait a moment. I think I've got some matches."

"He thinks he's got some matches. Resourceful."

A dim glow illuminated the ice walls.

"That's not going to do much good."

Switch's voice, hoarse with alarm: "I haven't lit it yet."

The glow intensified. It seemed to have no source; it was all around them, green and spectral. They clung together in fear—even Shrug's eyes cleared and he stared at the ice wall with horror.

"Look—"

Deep within the ice was movement, a black shifting, a vague shape in the emerald glow. They watched as it grew, extended itself weirdly in blurred fingers of darkness and suddenly the entire wall was alive, dancing light and shadow as a blazing illumination appeared.

They looked at each other, faces crimson bright and terrified, then with one accord they turned and ran back down the ice corridor, cannoning from wall to wall and clawing at each other to reach the safety of darkness.

WHEN eventually they reached the spire they found Jacko stamping the snow off his boots. He paused in the act of shrugging off his overcoat, astonished as

they pounded up the stairs and flung themselves to the floor, sobbing for breath.

"What goes on?" he asked.

Switch recovered first. "There's a ghost in the tunnels," he gasped. Memories of his childhood came back. "A bogymen. A great big black—it was enormous!" The effort of description was too much. He subsided, panting.

"A Pad?" asked Jacko sharply.

"We know a Pad when we see one," Cockade said. "This was black, all sorts of shapes, twisted like. And there was a light with it. Pads don't have lights. And it was *in* the ice."

Jacko regarded them thoughtfully. They had seen something, that much was certain. But there was no way for a Pad to enter the ice corridors.

"What's up with Shrug?" he asked suddenly.

"He's had a shock," Cockade replied hastily. "He's not him self."

Jacko bent down and sniffed at the prone figure. "He's been drinking. You've let him start drinking again."

"We couldn't help it, Jacko," Switch whined. "We found him like that."

"You damned fools," Jacko said quietly. "I go away for a morning's hunting—for the good of us all—and I come back and find this. I sometimes wonder why I bother. How many times have I told

you to keep him away from liquor?"

Cockade and Switch clung together guiltily, eyeing Jacko nervously as he towered above them.

"You wouldn't leave us, Jacko?" asked Switch.

The tall man shrugged and turned away, flinging his overcoat into a corner. "Get any food?" he asked.

A long silence built. At last Cockade answered.

"There—didn't seem to be any, Jacko."

"No cans? You mean everything's gone? There are other shops beside the supermarket, you know."

"Yes, well we were just going to look when suddenly we saw the—thing. It scared us. We ran," Switch explained eagerly. "I'm sure there's plenty down there, really, Jacko."

"And if there isn't we can all sail away in the Snow Princess," added Cockade, anxious to please.

Abruptly Jacko strode to the steps. "Come on, you two," he commanded. "We're going down. I want to find out what's happening down there. I can't depend on your stories, that's obvious."

Leaving Shrug asleep on the floor, they descended the steps to the ice corridors.

SHRUG'S body flew, divided. He was soaring above the snowfields into the white sky—up, up—and

suddenly the sky was blue and the white was all below. The many parts of Shrug, each one conscious of its collective entity, wondered at the blueness of the sky which was the exact color depicted on the label of Fine Old Vatted Jamaica Rum. The many Shrugs had never seen the sky before but knew what to expect, and presently were winging their way toward the huge figure of the Man With One Leg with the green feathered creature on his shoulder.

"Pieces of eight!" cried the green one and disappeared, leaving the Old Man lying on his back before the upturned hat full of scarlet snakes. The Old Man's lips were moving. Shrug gathered around him and saw that he had Jacko's face.

Jacko said, "I'm worried about the Pads. They're acting strangely."

Shrug felt deeply obligated when he heard this; his contribution toward his comrades' welfare had been little enough as it was, so he said, "Yes, Dad—" saluted and divided again. Climbing astride twelve bottles of Beefeater Gin he swarmed into the sky once more, grateful for their willing assistance.

Flocking low over the snowfields he spotted the Pads; there were a large number so he divided further and blended with them. He comprehended. He thought as they thought . . .

Forward, together. Toward the wind. Meat

The meat with the large Shell.

Dodging, swerving, oh, HUNGER.

Gone.

Gone into the wind.

So into the wind for meat.

Together.

Together I . . . we . . . as ONE,

All into the wind.

Slowly, slowly Shrug collected himself into one consciousness, became aware of the hard floor, opened his eyes, groaned, heard his own voice and began painfully to climb to his feet.

The bell-tower was empty; the fire burned low. He staggered across the room and threw some dry sticks into the upturned bell.

His head ached fiercely. He climbed the ladder and strapped on a pair of skis.

JACKO strode along the ice-corridor swinging the lamp while the other two trotted behind like curs.

"Exactly where did you see this thing?" he asked. A new rifle hung from his shoulder, slapping his hip as he walked.

"Along here, Jacko. Along here. Right where you hid the liquor." Switch pointed eagerly, a nervous gun dog.

"Got your picks?"

"Yes—yes—"

"Guns loaded?"

"Yes."

"Nothing to be scared of then, is there?"

"Not a thing. Not a thing." Nevertheless Switch remained a couple of paces behind Jacko. He laughed meaninglessly.

Cockade slowed as Jacko walked up the final stretch of the dead-end corridor. "Look—" she said suddenly. "I'm scared. I don't mind who knows it. I'm scared waterless. Jacko!" she cried after the retreating lamp. "Let's go back. Jacko—" Suddenly she realized she was alone in the dark and dashed forward, only to collide heavily with Switch running back. They clung together, shivering. Waves of mutual terror engulfed them.

"Let's get out of here," muttered Switch.

"What's that?" Cockade shrilled. A deep thudding boomed along the corridor.

"It's the thing!" wailed Switch, psycho with fear. "It's breaking through—it's got Jacko."

There was a clear splintering crash and the tumbling sound of falling debris.

Whimpering with terror, the two rushed back toward the tower.

"WE FOUGHT," breathed Switch, gazing into the fire. "God, how we fought." His knuckles whitened at the recollection.

"It was terribly strong," Cockade added.

"What did it look like?" asked Shrug.

"Big. Huge."

"But Jacko had a rifle?"

"He didn't stand a chance. It was on him before he could move." Cockade could visualize the entire scene. She shuddered. "I feel there's something we ought to have done," she said. "But it was too late. We barely saved ourselves."

"So it's still down there."

"It can't get into the tower. We bolted the door."

Shrug got to his feet. "You don't think it might batter its way through?"

Cockade thought. "The door's oak," she said. "Where are you going?"

"I'm going to unlock the door," replied Shrug carefully.

"What are you talking about?" Switch looked up in sudden alarm.

"Listen to me, you two." Shrug spoke quietly. "While you were fooling about below I went outside to clear my head. Over the far side of the village I came across a roof just level with the surface. There was a broken skylight. I looked inside. I saw clothes and a heap of stores."

"People?" asked Switch wonderingly.

"I didn't see anyone. But I began to think. I thought about what we saw in the tunnel. And then I

knew what it was. It was the shadow of a man carrying a lamp along another corridor. That's all. No ghost. No monster. Just a man."

"He could be dangerous," ventured Cockade.

"He arrived last night," continued Shrug. "He was being chased by flesh-hunters and hid. There was very little snow on the floor. I don't think a man the flesh-hunters were after is much danger to us." Shrug's voice hardened. "And then you come back here and give me this load of cock about a monster. I tell you what happened. You got scared down there and you ran. You ran out on Jacko. After the way he's kept our group going all this time, after all the times he's risked his skin hunting Pads to bring you fresh meat. As soon as you think things are getting rough you run like rats and leave him to face them alone."

Cockade and Switch stared dumbly at each other. For once even Cockade had nothing to say.

Switch descended the stairs and unbolted the door.

III

"Breakfast, anyone?" asked Cockade gaily, stirring a mess of tomatoes in a sizzling puddle of rancid fat.

Switch and Cockade had feigned sleep when Jacko and Shrug returned from below the

previous night. Unwilling to face the accusations of the others they had huddled together in a dark corner, snoring ostentatiously. Now, with gray daylight shafting through the holes in the spire, Cockade was trying to make amends.

Jacko stirred and opened an eye. Shrug sat up groaning. "What is it?" asked Jacko.

"Tomatoes." A note of defensive acidity crept into Cockade's voice.

"Is that all you could find?"

"The supermarket's empty, Jacko," Switch reminded him.

"We'll have to find some other place, then." Jacko climbed to his feet, scratching. He gently prodded a sleeping huddle with his toe. "Breakfast," he said.

Switch and Cockade watched warily as the heap of clothing unravelled itself. Two heads appeared. A man stood first, kicking himself free of the blankets. He was well over six feet tall and a shaggy mane of dark-brown hair fell over his low brow. His piggy little eyes, red-rimmed with sleep, were set deep in a round, bloated face. He looked immensely powerful, broad-shouldered and primitive. Switch eyes him nervously. He was bigger than Jacko. Then his attention turned abruptly to the girl.

She rose from the sea of blankets like a raven-haired Venus, slim and pretty with green eyes in

a grave, oval face. Her breasts were small and firm under a rumpled, close-fitting white dress which, Switch guessed, she had obtained yesterday in the corridors. Her legs were strong and beautiful. He licked his lips and glanced at Cockade in involuntary comparison, to find her glaring at him furiously.

"Hello," the girl said, smiling like a tropical sunrise. "My name's Mignon. I know Jacko and Shrug already. Who are you two?"

Cockade sniffed. Switch said, hastily, "Switch and Cockade," trying not to goggle too obviously.

"And who's that?" asked Cockade, gesturing at the giant.

"He's my friend. He's William Charles."

Hearing his name, the huge man shifted his statuesque stance. "William Charles," he repeated thickly, lumbering over to peer into the pan. He smacked his lips at the sight of food.

"I think William Charles is hungry," observed Mignon.

THE debate that followed breakfast was necessarily constrained and polite at first due to the beauty of Mignon and, to a greater degree, the size and obvious strength of William Charles. But before long informality crept in.

"He doesn't say much," Mig-

non was informing them, "but he's very strong."

She intended this as a justification of his usefulness but Switch took it as a veiled threat and began to bluster.

"We've got guns here," he said, "and we're well organized. We've beaten off attacks before and we can do it again. We may not look much, but we're united, by damn."

A snigger from Shrug ruined the effect. "We will fight them on the beaches," he intoned, recalling a favorite monologue of the Old Man's. "In the fields— We will never surrender."

"Since when have we been united, Switch?" asked Jacko mildly. "Personally, I'm very pleased to see Mignon and—ah—William Charles. Strength is in numbers."

"Where the hell did he get a name like that?" asked Cockade.

"And another thing, we need the help of a man like William Charles to cut new tunnels. Food's running low. We've got to find more sources."

"Until the Snow Princess is ready," put in Shrug.

"It's his name," explained Mignon. "Just his name. That's what he was calling himself when I first met him."

Cockade snorted. "It doesn't mean anything and it takes too long to say. It won't do." She stared around aggressively. "I propose we call him Bog. Short and to the point."

Murmurs of agreement came from Jacko and Switch, although Mignon's lips tightened and Shrug glanced at Cockade sharply.

"Bog it is, then." Cockade drove the point home. She pointed at the giant, having decided by now that he was harmless. "Bog."

"William Charles," came the slow reply. He indicated Cockade. "Cock-ade," he said, not without difficulty. He thumped himself on the chest. "William," he said. Then he pointed vaguely.

"William Charles!" exclaimed Mignon.

"Charles!" boomed the giant triumphantly, gesturing at thin air.

"What's he mean?" asked Switch, staring nervously at the area of space indicated, as though expecting a materialization.

"I speak for both," explained the large men obscurely.

"It's one of his little jokes," said Mignon hastily. "He pretends there's two of him. Someone once told him he worked like two men and he believed—with a name like that." In an unconscious effort to attract attention away from her protegee she walked around the room inspecting things, picking up items and holding them to the light, while the men's eyes followed her every movement.

"He's a nut," said Cockade with conviction. "A raving nut."

Mignon's voice came tentatively from the other side of the room;

she was examining a stone jar intently.

"Maybe Bog would be a better name," she ventured.

"Much better," Cockade stated definitely.

"What's this?" In the flat pause which followed Mignon held up an oddly shaped piece of wood.

Shrug answered reluctantly, "That's for the Snow Princess."

"Snow Princess?"

Switch explained. "Our boat. Our totally enclosed ketch-rigged snow yacht outside. I built that piece myself—" pride sounded in his voice—"exactly according to Jacko's plan. It's called a knee, because that's the way it's shaped. It's meant to fit near the bottom. I expect Jacko will install it today. There's room for four in the Snow Princess," stated Switch firmly, "and it's enclosed because—because—" His voice faltered.

"Because some of you can't go outside," supplied Mignon gently. "A lot of people are like that."

"Yes, and today we start making the sails. The hull's almost complete, Jacko says we've only got to fit the thwarts and the transom and the cabin roof and sides, and a few other things—"

"I'm making the sails," Cockade said. Switch's voice rose to a triumphant crescendo.

"So we hope to load it up with supplies in a week or so, not more than a couple of months at the most, then away we go!"

"This I must see," said Mignon. She climbed the ladder slowly, but only Switch watched her legs. She walked around the gallery, looking out through the holes in the spire. Switch watched her with respect bordering on adoration. After his years in the ice corridors he respected anyone who could stand and look at that terrifying, vaulting infinity of white nothingness outside. Cockade read the expression on his face and sniffed. Bog stared at the fire.

Shrug and Jacko watched each other.

Mignon was descending the ladder. She looked at Jacko and there was a world of understanding in her green eyes. "It's a wonderful boat, Jacko," she said softly. "I only wish it were big enough to take Bog and me, too."

Jacko expelled a deep sigh. "Maybe we can enlarge it," he said.

SHRUG watched as Bog wielded the pick, driving a new tunnel in the general direction of the Wine Lodge, where it was felt that there might be a grocery store. The Wine Lodge had been dynamited by Shrug several months before and cut off from the main warren of the tunnels, but now Bog was reopening the old route, driving a corridor parallel to the previous, collapsed one. Shrug was positive that the Wine Lodge had

been part of a block of shops hitherto unexplored.

He had experienced a thirsty nostalgia, watching Bog work and remembering old times in the Wine Lodge, so he had fetched a bottle from the cache. He drank as he directed operations.

"A little to your right, Bog," he called cheerfully, wiping his lips. "We're getting out of line."

The big man swung the pick, chanting rhythmically.

"Hold it." Shrug chuckled, feeling lightheaded. He slid the sledge forward and began to shovel the loose ice from around Bog's feet. When the sledge was full he seized the rope and his lamp and cantered off down an abandoned spur he was using as a dump. He sang a snatch of echoing song as he trotted along, the sledge bumping easily behind him, and presently he had an idea.

Returning to the scene of operations, he called Bog imperiously to a halt.

"What?" The giant turned around, puzzled. He felt he could keep this up all day; the exercise of his muscles in the pleasant company of his new friend gave him infinite satisfaction.

"We're wasting our time, Bog, old pal."

"Uh?"

"What we need—" Shrug chuckled with anticipation—"Is dynamite."

"Dynamite." Bog repeated it

slowly, savoring the sound.

"Blast our way through." Shrug made an expansive gesture.

"Dynamite!" yelled the giant as they hastened back toward the hardware shop. Shrug was laughing helplessly and after a while, sensing the humor of the situation, Bog joined in.

JACKO and Mignon stood on the gallery, looking across the snowfields. Jacko was talking.

"It seems to me that we've got to get out of here sooner or later. I think there's plenty more food in the village, just waiting to be found, but that's not the point. Even with you and Bog joining us, the group is too small. We just scratch around here until we die. To me, that seems pointless."

"Where did you think of going?" asked Mignon.

"I'm not sure. That's the problem. We tried it once, you know, after a fight with the flesh-hunters. We split up and tried to get away. I think we were upset at the time because one of us had been killed. I took the Old Man and went to a place where there was no snow, a long way from here." He gestured vaguely. "When I got there I didn't like it. And the Old Man died. So I came back and found the others still here. Switch and Cockade were scared to go outside—they'd lived underground for so long."

"The Old Man meant a lot to

you?" she queried understandingly.

"He did to all of us, I think, although the others didn't realize it. Keeping him alive provided some sort of purpose; we didn't think about ourselves so much. When he was dead we just seemed to drag along with no aim in life."

Until you dreamed up the Snow Princess . . .

"And recently things have been getting worse," continued Jacko. "We haven't eaten fresh meat for weeks. The Pads have got themselves—organized. It worries me. They used to be just animals. Now they're something else. I sometimes think they're more dangerous than the fleshhunters."

"Don't underestimate the fleshhunters," Mignon warned him. "They're becoming more of a menace than ever. If they had caught Bog and me we wouldn't be alive now. They're hungry. Maybe they've had trouble with the Pads, too. A lot of towns upwind have got themselves organized, like yourselves, only they're bigger than your group. They can defend themselves. The flesh-hunters leave them alone but attack any messengers traveling between the towns. That's what happened to Bog and me. We were going from Bovey to Moreton to work out a deal, a possible link-up. They jumped us and we had to run downwind. They followed us all the way—" Her voice trailed off and she was trembling, reliving

the horror of the pursuit.

Jacko placed his hand over hers. "I'm glad you came, Mignon," he said sincerely.

BELOW, Cockade and Switch were getting restless.

"I don't like it," said Cockade. "They're getting too damned friendly, those two." She was sitting on the floor, a canvas sheet spread over her knees. She was sewing furiously.

"I don't see anything wrong with it," observed Switch mildly. "It's about time Jacko had a girl."

"That's the sort of stupid remark I'd expect from you," Cockade snapped. She flung the sheet aside and stood over Switch, who was planing a strip of plank, sweat streaming down his face.

"What do you mean?" he asked, aggrieved.

"Just this." She seized a handful of hair, jerking his head back. His astonished face peered into hers. "There's only room for four in the Snow Princess." She thrust four fingers under his nose. "Four, you understand?"

"I know that."

"Jacko's up on the gallery with that girl. Shrug's in the tunnels with Bog. Tell me, Switch," she hissed—the expression on her face frightened him—"which are the odd two out?"

Comprehension dawned. "Us," he replied simply.

"Us," she repeated. Her eyes

narrowed. "Switch, if we don't go in the Snow Princess, then nobody goes."

"What do you mean? What are you going to do?"

"You'll see." Abruptly she released him and turned away as Jacko and Mignon descended the ladder. "What have you two been up to?" she asked.

"Just showing Mignon around."

"Bog's in the tunnel with Shrug."

"I know that. How's the sail coming along?"

Cockade's reply was drowned by a shuddering concussion that boomed through the tower, causing the dirt on the wooden floor to dance like fleas on a griddle. As the four regarded each other in alarm a fierce gust of wind swept up the stairs, swirling with it an assortment of cardboard cartons and tattered pieces of wrapping paper. A lamp overturned, spilling a spreading dark pool on the floor; it ignited explosively, adding leaping flames and flickering shadows to the general confusion.

Jacko was the first to pull himself together. "Mignon, Cockade!" he shouted. "Put that out, quick. Switch, come with me." He plunged down the stairs, followed, after a second's pause, by Switch.

Mignon flung sacking on the blaze, partially smothering it.

Cockade watched. A thin tongue of flame licked at the half-finished

sail. The material blackened. Sparks trickled around the edges of the canvas.

Cockade thought.

"IT SEEMED a good idea," mumbled Shrug, abashed.

"You've brought down the whole of that section of tunnel," Jacko accused. "You've wasted a day's work and more. You'll have to start again, tomorrow."

"Start again," repeated Bog.

"Anything you say, Jacko," Shrug agreed.

HE SPUN into the sleep of alcohol. Unbidden thoughts danced through his mind. It seemed he was standing on thick, strong legs and he felt good. The wind was cold and refreshing and the pit into which he gazed was deep with promise. Shrug spoke with his mind to his fellows as they grouped with him and, as he spoke, it was as though they spoke as one in a communal murmur of agreement.

Now?

Now!

COCKADE lay awake, watching the tapering roof of the spire as the light from the dying fire sprinkled its last rays among the ancient timbers.

"Switch?" she called softly.

There was no reply from the sleeping form beside her.

Silently she wriggled out of the blankets.

IV

"SORRY about this, Bog," Shrug said softly.

"Okay," replied the giant briefly, surveying the pile of ice boulders. They rose steeply in a vast tumbled heap at the end of a short corridor, terminating far above at a ragged line of pale sky. Wisps of snow drifted down, funneled by an icy wind.

"We blew right through to the surface," said Shrug wonderingly and a cold half-memory caused him to shiver. He had known the extent of the explosion before seeing it this morning. Yesterday they had taken shelter while awaiting the blast—then the infuriated Jacko had stormed past, examined the pile of rubble briefly in the dim lamplight and returned to find them cowering guiltily in the supermarket. He had whisked them straight back to the tower and they had hardly discussed the matter. Yet this scene was familiar.

"Start?" asked Bog, swinging his pick at the ice-wall.

"Right," said Shrug. This looked as good a place as any. They would have to take a wide arc around the rubble to avoid the fractured, insecure ice in the im-

mediate vicinity—no big problem.

Bog commenced his chant; the chips of ice flew.

"Hold it." Shrug heard a rolling cascade and feared that Bog was bringing down the ceiling. A chunk of ice bounced across the floor, glancing off his ankle. Puzzled, he walked a few paces to the scene of the explosion. The steep slope of ice boulders was in dribbling motion, smaller pieces bounding down the slope and rolling away along the corridor.

He looked up and his heart chilled.

Climbing down the avalanche of ice, backward, its huge hindquarters blotting out the sky, was a Pad.

"Bog!" he croaked. He turned to run, stopped abruptly, his feet sliding.

In the feeble light of the lamp Bog was wrestling silently with a giant Pad.

Shrug watched helplessly as they fought. The animal had wrapped its forepaws around Bog's body; the man had both palms under the bearlike muzzle, thrusting backward. The Pad overtopped even Bog by almost two feet. Its tiny eyes gazed wickedly at Shrug over Bog's head. It grunted with rage as it forced the man's hands down and Shrug could smell its breath; animal, like a putrid carcass. Bog's coat had been ripped apart; his bare back bled around the Pad's bladelike claws, stain-

ing the silver fur a bright crimson.

Shrug found himself battering ineffectively at the beast's head with a pick; in the confined space he was unable to get a full swing. He was sobbing with fear and frustration, while Bog grew weaker. The giant's eyes were creased with strain and agony.

"Run, friend," he panted. "I win! I win!"

Shrug was aware of a final cascade of ice as the second Pad arrived. It moved into the glow, its bulk filling the tunnel, and watched the struggle with glowing eyes, seeking its chance to feast on the kill. Shrug slipped past the combatants and cowered in the reeling shadows as the fight swayed above him.

Bog was groaning with pain as the Pad's grip tightened and its claws bit farther through his flesh. The animal snuffled with excitement, its muzzle an inch from the man's face. It smelled blood and its jaws streamed saliva, steaming.

"Run, my friend," Bog whispered. Shrug heard and wept impotently.

Sudden inspiration prized his brain from the clutch of fear and he acted. Seizing the lamp, he smashed it over the Pad's great head. Fuel poured down the brute's shoulders and exploded into flame.

The corridor flashed into luminescence, the Pad's blazing head stared at Shrug from every re-

flective surface. As it staggered away he caught Bog around the waist and half dragged, half carried him down the tunnel. The other Pad, alarmed, backed toward the ice-fall. Shrug struggled on and soon a corner hid the inferno.

As Shrug assisted Bog toward the tower he heard gruntings and snufflings around them as countless Pads prowled the dark shops restlessly, aroused and somehow sharing the pain and terror of their brother. The tunnels were alive with the brutes, which must have been drowsing in the shops when he and Bog had made their way to the ice-fall.

Shrug and Bog reached the oak door at the entrance to the tower. Shrug thrust the big man inside and turned at a sudden radiance in the tunnel behind him. The blazing Pad appeared in the distance, head and shoulders a corona of fire repeated down the ice corridors in a thousand grotesquely distorted reflections. The animal was screaming in a crescendo of pain; it fell to the floor and beat at the ice with its paws in terminal agony.

As Shrug slammed the heavy door and threw the bolt he heard a great keening groan as a multitude of animal voices mourned the death of a comrade.

"YOU'VE really done for us now, you drunken sod," whimpered Cockade as she lis-

tened fearfully to the battering of heavy bodies against the door below. "You've let them in the back way. After all our work, fortifying the place."

Mignon looked up from bandaging Bog's wounds. "That's unfair," she said. "Shrug couldn't have known."

"In any case," said Switch confidently. "We can rig a temporary sail on the Snow Princess and get away. Cockade and I in the cabin, and the four of you outside."

"We can't move Bog," objected Mignon.

"The Snow Princess isn't finished yet," said Jacko.

"Not even so we could go slowly?" pleaded Switch desperately.

"I'm afraid not."

Cockade watched them narrowly, the sickness of frustration in her stomach.

DURING the night she had mounted the steps to the gallery, carrying a can of lamp fuel. She had made the journey several times, quietly, keeping an eye on the sleeping mounds on the floor.

The gallery wasn't so bad in the dark. The force of the wind was disturbing as it blasted through the holes in the spire, but not terrifying; and she was unable to see the tossing white emptiness which, in the daylight, filled her

with unreasoning panic.

She took up her position at a hole directly above a certain point in the tower wall; the point at which, Jacko said, the Snow Princess lay outside. Her idea was simple and basic. If she and Switch were not going on the Snow Princess, neither was anyone else. She would pour fuel over it and light it.

She struck a match experimentally, with trembling fingers, threw it out of the hole. The wind swirled it away, extinguished.

She struck another.

And another.

She was sobbing with frustration. She struck match after match.

The box was empty. The cans, unused, stood at her feet. In her rage she kicked them. She heard someone stir below.

BOG'S wounds were dressed; he lay with closed eyes, his breathing shallow. Jacko, Mignon and Shrug made for a ladder. The din from below was increasing; blows on the oak door were accompanied by splintering sounds.

"Could we make it in the snowboat, Jacko?" asked Shrug quietly.

"I don't think so. It'd get bogged down with the weight. But it may be the only chance we have. We could cover Switch and Cockade with blankets and Bog could steer lying down. The other three would have to go on skis. That still

means three in the snowboat. It's only built for one. And how do we get Bog up the ladder and outside?"

They climbed to the gallery and looked out at the swirling whiteness. They saw the chasm in the snow, a deep fissure away to their left. A hundred yards downwind a horde of young Pads gamboled in the snow, playful as puppies, while their adults prowled the ice corridors for fresh meat. Ten feet below the hole in the spire lay Jacko's snowboat. Scattered around the lee of the spire, partially covered by snow, were the various components of the Snow Princess, unassembled.

Grouped around the spire, staring up with intelligent, hungry eyes, waited a tight circle of Pads.

COCKADE and Switch sat at the foot of the stone steps leading to the bell-tower, watching the oak door fearfully. It trembled again and again as heavy bodies dashed themselves against the far side. Fine cracks were creeping along the grain of the timber. They held rifles and from time to time fired at the door, aimlessly.

"It's not going to hold for long," muttered Switch desperately. He raised his rifle and loosed off a round. The stone chamber rang with the concussion and bullets smacked into the timber. "The slugs won't go through," he said.

"The door stops gunfire but it'll let in the Pads." He stood, abruptly. "Let's get out of here. We'll be safer in the tower. What's keeping the others, anyway?"

"Wait a moment," said Cockade. Her voice was sharp with suspicion. "You're right. They've been a long time up there. You know what's happened? The sods have gone! They've run out and left us down here! They've cleared out!" She jumped to her feet and pounded up the steps. "Are you there?" she shouted echoing into the spire.

Bog, prone on the floor, shifted and opened one eye.

A couple of shots rang out from above, then Jacko's voice. "We're here," he called, tiredly.

"Good," yelled Cockade. "Because I just thought you might have had the notion of bugging off with Shrug and your girl friend. What the hell are you shooting at? You'll attract the Pads to the spire, you damned fool!"

"They're already here," Jacko called back.

Bog spoke from the floor with an effort, his face dark with slow rage. "Mignon would not bugged off," he said emphatically.

"You mean we're surrounded?" screamed Cockade.

"I'm afraid so."

"Mignon never buggers off."

"Shut up, you ox! We're coming up!" shrieked Cockade. "I don't believe you!"

"Stay there. I'll come down. Shrug. You and Mignon wait up here for a while. I'll go and sort out those fools below. Our only chance is to pick off the Pads as they come up the steps. We can't all retreat to the gallery. We'd never be able to carry Bog up the ladder. Somehow we've got to drive them off."

"I heard you call us fools!" yelled Cockade.

THERE must be over a hundred of them," said Mignon.

Shrug was silent for a moment. "Do you smell fuel?" he asked suddenly, sniffing.

"Yes. Look, there are some cans around."

Shrug leaned out and gazed at Jacko's snowboat. He thought about Cockade for a moment.

He raised his eyes and scanned the snowfields.

He thought about the Pads. Disconnected snatches of memory came to him; things Jacko had said. Things he had dreamed?

"Mignon," he said, "I want you to keep me covered. I'm going down to Jacko's boat. Hold the Pads off while I'm down there. As soon as I'm back, let go the mooring rope." He slackened the rope which stretched down to the tethered craft, dropped the cans of fuel out of the hole, took a lamp from the gallery floor and climbed awkwardly outside. One-handed,

he descended the rough ladder to the snow. Above him Mignon's rifle began to bark.

"RIGHT, you two." said Jacko authoritatively. "I want you halfway down the steps, standing with your rifles ready. Keep firing as they come through the door and back up the stairs slowly. Don't panic. Don't run. Bog?"

"Yes."

"Here, take this rifle. If they get past us, pick them off as they reach the top of the steps."

Painfully Bog shifted his position, lying on his side, the rifle held in a single hand.

THERE was a final, splintering crash and the heavy oak door split at the hinges and fell into the chamber, slamming flat to the floor as an enormous Pad bowled through, head over heels, in a whirl of white fur and scrabbling claws. Jacko's rifle cracked out and the animal lay still.

Grunting and roaring, the pack surged at the doorway and jammed for an instant while Jacko, Switch and Cockade rained bullets among them. The screams of agony were nearly human as several Pads sank to the floor. Those behind climbed their comrades, jaws agape and drooling as they spotted the trio on the steps. An animal stink pervaded the chamber.

"Start backing up!" yelled

Jacko, dropping the leading Pad as it bounded up the stairs. It reeled back among the others and in the confusion Switch felled another with a bullet in the throat.

Cockade had dropped her rifle; knuckles to her mouth she bit back a scream when another Pad, rearing huge, spun away, roaring as blood gushed from its stomach.

By now the chamber was full of Pads and still they crammed through the doorway, forcing themselves up the stairs by weight of numbers. Jacko and Switch backed up slowly, firing continuously into the seething, struggling white mass. Roars and screams indicated they were striking home, but the numbers were too great.

Jacko found himself at the top of the stairs. "Run for it, you two!" he shouted. "Up the ladder, quickly!"

The command was unnecessary; Switch and Cockade had bolted. Flinging their rifles aside, they were scrambling up to the gallery. Jacko took up position for a final stand, rifle at the ready, legs straddling Bog.

The leading Pad bounded up the stairs, saw the two men, reared on hind legs and crossed the bell-tower in four strides, ignoring the bullets which smacked into its body. It stood before Jacko; it swept his rifle aside contemptuously, with a massive paw.

Jacko regarded the Pad.

This is the finish, he thought.

And in the instant of thinking, suddenly he knew that this was not the finish.

Because the Pad's reaching forepaws froze, then dropped to its sides. It paused irresolute as Jacko stared into its eyes. Bullets tore into its body from above—but still it stood there for a timeless moment, while behind it the other Pads hovered, watching, not moving.

Then it turned away; they all turned. Slowly at first, almost thoughtfully, they ambled back to the top of the stairs, then in gathering haste they descended, falling over one another, scrambling in their eagerness to leave the bell-tower. They uttered strange mewling sounds, somehow quite touching.

They were gone. The bell-tower was empty.

Jacko climbed the ladder.

Switch and Cockade sat on the floor of the gallery. Shrug and Mignon were looking outside, spellbound.

The bleak snowfields were alive with fleeing Pads. They had left the spire; they raced bounding across the snow kicking mist, they scrambled out of the fissure, treading on one another in their haste to join the pack; over a hundred of them, racing downwind.

Pursuing a glowing crimson fireball.

SHRUG had hurried away; soon she rejoined them, rubbing his hands as a dull concussion thudded through the tower.

"Just a little explosion this time," he said happily. "Enough to seal the gap. They won't get in that way again."

Cockade was crying, apologizing for all things she had done, quite a number of which were unclear to the others.

"Forget it," said Shrug. "You'll feel better in the morning. You'll be back to normal, unfortunately."

Bog misconstrued Cockade's mumblings. "I said Mignon did not bugger off," he asserted amiably. "Mignon will never bugger away from William Charles. Cockade does not understand Mignon." He wrapped a huge arm around his slender companion's waist, drawing her down to the floor beside him.

Jacko eyed them, a curious sadness within him. Mentally he shook himself. "You know, I thought if we shot a few, they would be satisfied and eat their own dead."

"Instead you stared them down," cried Switch enthusiastically, uplifted in the aftermath of battle. "The power of the human eye!"

"Not exactly. You'd better explain, Shrug."

Unconsciously Shrug puffed out his chest. He opened his mouth to

tell them all, then closed it, abruptly.

How could he tell them that he had dreamed mad dreams while under the influence of hard liquor, and had deduced from these and their parallel with subsequent events that the Pads were telepathic to a degree? That he, when his mental barriers were submerged in alcohol, could pick them up? Cockade would laugh at him forever.

Go on, have another drink, Shrug, and tell us what the Pads are thinking. A good excuse for a bottle or two, eh, Shrug? No . . .

"Jacko and I noticed the Pads have started acting together, like ants, as if they were one body instead of several," he explained at last. "They've gotten organized. They think as one.

"They were in the tunnels and around the tower, encircling us. That takes some sort of intelligence. They can't speak, so there must be something else—" He warmed to his theme. "Anyway, downwind were their young." He stabbed the air, reliving the scene, and so great was his capture on their imaginations that all eyes followed his dramatic finger. "And below was the boat—and beside me were some cans of fuel." He grinned unpleasantly at Cockade. "So while Mignon covered me I hoisted the sail, ignited the boat and cast it off. It drove straight for the young Pads, blaz-

ing. They panicked and ran like hell, away across the snowfields, scattering in all directions. The Pads saw this and those that didn't, sensed it. They left abruptly. There's nothing like danger to the young, to bring the parents running—"

Shrug smiled around at them, the man of the moment. They regarded him with awe.

"Well," he said, "for the small sacrifice of Jacko's snowboat—"

Mignon spoke quickly. "You mean the Snow Princess, of course," she corrected him.

Shrug stared, began to speak, thought better of it.

Jacko smiled slowly.

"It's a shame," continued Mignon, "for all that work on the Snow Princess to go up in smoke. But it was a small sacrifice when you consider the result. We can build another. Bog's quite good at that sort of thing. He used to build snowboats at Bovey—big ones." She grinned at the giant.

Jacko and Shrug regarded her with adoration. With a few words she had eliminated the problem which had been bothering them for weeks. The Snow Princess had officially ceased to exist.

"Don't need boat," rumbled Bog with a deep laugh. "We have our own Snow Princess." He tightened his arm around Mignon.

Cockade, scowling, wondered if maybe Bog might not be as stupid as he looked. ★



INTERSECT GREEN

His punishment was to
destroy a planet that
was polluting the Universe. . .

ERNEST TAVES

I HAVE just been tried in, or by, the highest court on the planet for what still seems to me a trivial offense: not always wishing to walk, I'd tried to build myself a private cruiser, a small one. I had been discovered (by means I didn't understand) and that had been that. I wait for the three Judges to reappear. A door opens and I rise as they slowly enter. They seem too young. Again I admire their golden robes. I am dressed in the pale brown tunic I must wear until my sentence is completed. I remain standing while the others are seated. My features are adjusted into what I mean to be taken as an expression of respect, but containing nothing of obsequiousness.

"Musician and Poet Rockwell," the Judge seated between the other two says, not unkindly. "Your offense is grave. Do you wish to say something before sentence is heard?"

I return his open gaze with my own. "I didn't—don't—understand the gravity of my actions, sir."

The Judge nods. "Just so. Had you understood, you would not have committed this crime. Therefore our sentence is that you study, with Master Clarke of the Third Institute, the history of this planet and of the Galactic Federation; further, that you devote some time to observations of Central Control."

No time stated, I note. Also, na-

ture of certain operations not stated, but I don't ask questions. The Judge begins to nod in dismissal, then says: "By the way, Musician Rockwell—I'm familiar with some of your performances. You have promise."

"Thank you, sir," I say, wondering what's wrong with the poems.

THE joint Musician and Poet category rates purple, a color I'm fond of; also, the status value of purple robes is high—and I confess to my share of vanity. Now, however, I was *déclassé*, and hoped none of my friends would take note of me and my tawdry garb as I walked, next day, to the Third Institute. Master Clarke's robes would, of course, be royal green, and you can't go higher than that. I would be at a disadvantage in more ways than one.

The Master's quarters were spacious and scholarly. Shelf after shelf of books. Books! I gaped when I saw them and there went another piece of such face as I had left, which now rapidly approached zero. I knew what they were, but I'd never held one in my hand.

"Yes," the Master said. "Surprising, I know. But then I'm a hopeless antiquary." No doubt he was, but his study was also filled with the most comprehensive array of data terminals, inputs, outputs, screens, the whole works,

I'd ever seen. He took a volume from the shelf, placed it in my hand. I failed to recognize title or author. "These are all reconstructions, of course. Hard enough to find, even so." He replaced the volume. "Name Korsakoff mean anything to you?"

"No, sir."

"No reason it should, now. It will. No need to stand on ceremony here, son, make yourself comfortable. We'll get to Korsakoff later." He pushed buttons on an impressive console, handed me a crystal glass filled with amber fluid and put on the desk before him a similar glass, except his contained something colorless. Separating the man from the boy? The Master from my unfrocked self? I didn't know—and I didn't know if what was going on here was by design—but I felt as if I had swiftly and skillfully been programed into a condition of humility. Something new in my experience.

After the Master had raised his glass I took a sip from mine. Something else new in my experience; I couldn't name that potion, but whatever it was, it was good. I sensed the occurrence of gentle internal events, I felt cooperative and friendly. Well—Masters aren't Masters for nothing. •

"Why did you want to build your own cruiser?" he asked, and that was the beginning of a long session. Not too long, though, be-

cause the glasses were refilled at suitable intervals, and I was glad of that. I explained how it was that I didn't like to walk, and wanted a cruiser, a small one, of my own.

"But you can always dial one. You wouldn't have to wait long, usually," he said, and I said that was true—but somehow it wasn't the same, I'd wanted one of my *own*. And you sometimes did have to wait for a public cruiser and sometimes you even had to share it. While we talked, everything we said was, of course, fed into multiple inputs.

"Why do you think, son Rockwell, we have only public cruisers? Why is their number *most* controlled?" he asked. I hadn't been called *son* for years, and I reacted to that. I confessed that I didn't know.

"No," he said, "you don't know," and he was kind and said that my attitude was not unusual, the laws had been in effect so long that everybody accepted them as facts of life. What *was* unusual was my attempted violation of the prime law that an individual can't own a cruiser.

We kicked my motives around for quite a bit and that was enough for the first day. I felt good when I left, though I still didn't want my friends to see me in the brown tunic.

THE Third Institute is History and next time we had a go at

that—at, specifically, the history of this, our planet.

"Millennia—many of them—ago," the Master said, "the then inhabitants of this planet almost strangled it. It was a near thing."

I said, with genuine humility, that I didn't see the relevance of that datum in the present context. What had almost killed the planet, he said, was a combination of factors, by far the largest of which had been individual ownership of a primitive form of cruiser, whose combustion products had polluted the atmosphere to the point where photosynthesis (he tried to explain that to me but I had to do homework on it later) had almost ceased—in consequence the human species, along with most of the other life forms, had almost been done in.

The Master punched the console and we looked at pictures from that time. All those funny-looking cruisers! City streets and broad ribbons everywhere filled with them.

"Anybody could have one, own one?" I asked "Anybody?"

"Anybody who could afford one."

"What a time that must have been."

"Yes. It almost killed the planet. It was a lousy scene."

"Lousy?"

"Forgive me—I'm afraid I use antiquarian language now and then. Lousy is an ancient word

meaning unpleasant, contemptible, nasty."

"I see. But our cruisers, now, don't pollute, do they?"

"Not much. The prohibition of private ownership of them is largely symbolic—a reminder, to some of us, at least."

We went on for a few more sessions. I could have read it all on my own—or most of it—but the Master must, he said, be sure I understood and interpreted correctly. I wasn't used to the study of history, after all, I was a Musician and Poet—though my now pedestrian raiment denied that.

After the near-miss with disaster we had, I learned, pulled up our socks and straightened out. One government for the whole planet, for example—the only way controls could be effective. Then the discovery of hyperspace and, at the same time, the flowering of the Genetic Era. Two simultaneous breakthroughs: intragalactic exploration and colonization, and genetic manipulation in aid of producing *Homo sapiens universalis*, or *Homo sapiens sapiens*, or whatever. Man sapient, that is, but more so.

A number of psycho-geneticists and somato-geneticists had worked on the development of better human strains, and one of these genetic dabblers had been Korsakoff. Korsakoff had been one of the more controversial of the psycho-geneticists, not always in favor in

the scientific community. The somatic problems were, in the end, almost trivial, but the physiological and psychiatric ones were not.

"You have studied all this?" the Master asked. I nodded. "So what was the next step?"

I thought for a moment. "Conduct experiments with the new subspecific variants. Get a group large enough and dump them on an uninhabited planet and see how they make out."

"Not elegantly said, for a Poet," the Master said, "but that's about right."

He detailed the program.

It had started millennia past and I confess I began to feel a sense of awe. Some of the mutants had worked out, some not. Some of the mutants, off on their own planets, had even gone on to construct better mutants. We—our planet—were still Home, we were the capital, for this was where it had all started. We and the other planets, those that remained sane, formed the Galactic Federation—whose headquarters were here.

"What happens to the other planets?" I asked—a point in respect of which my study materials had been curiously reticent.

"That is known only to Masters, Scientists and some Judges. And to a few others, such as yourself, who must be told. You will understand, of course, why you must be told. There is little in any archive on this, so I must tell you.

And will. You will, of course, swear secrecy."

I did, and the inputs gobbled up my pledge and, no doubt, imprinted it upon an array of multi-parametered matrices whose functions I could only guess at.

Master Clarke filled our glasses then, and this time I had what he'd always had. Incredible. My brain cleared—not that it had been fuzzy, but this was something else. "It's only for Masters and their—ah—guests," he said, "so don't become addicted."

Then he told me:

Sensors and transmitters had been placed, in isolated and inaccessible locations, on all of the experimental planets. The sensors monitored planetary atmospheres—for carbon monoxide, chlorinated hydrocarbons, hydrocarbon byproducts, and radioactivity. They picked up other data also, but these were the important ones. The transmitters hurtled these data, via hyperspace, into Planetary Watch—a top-secret facility in Central Control.

"Most of our citizens believe that Central Control is but the computer that controls the functioning of this planet. It is that, of course, but is also this. We, the Masters, think this is its most important function. We shall go there now."

We continued to talk, voices low, as we walked. He spoke of what he called the green line.

"What happens when the readings hit the green line?" I asked.

"When the curve—any of them—intersects the established limit we push a green button and destroy the planet. Fusion devices are in place."

"Just like that."

"For the greater galactic good, yes. Just like that, as you will see."

"Along with any other planets in that system happening to share the general area."

"If any, yes. But the chances are overwhelming they aren't inhabited."

"Why is observation of Central Control part of my sentence?"

"You'll see, son Rockwell. You'll see."

THE existence of the Planetary Watch is unknown to, say, 97% of our population. It occupies the top floor of Central Control. Both palm and voice prints are required to open the door of the elevator that takes you up. "How can such an operation be kept secret from so many?" I asked. "There isn't much curiosity," the Master said.

He led me into a fairly large room, three walls of which were covered with a dazzling array of screens, readouts, many lights blinking on and off. There was a console in the center of the room, presided over by two Scientists in white robes. A third Scientist patrolled the screens, pushing but-

tons from time to time, adjusting this or that, taking readings, making notes.

We passed through this room and through another door in the fourth side of the room. "The—I believe they call it basic hardware—is here." We were in an enormous room, now, filled with racks and panels, a subtle but pervasive hum, and mysteries. (I'm not a Scientist. Nor is Master Clarke, for that matter.) Large cables of many colors were all over the place, linking this area to that—the arteries, veins, and nervous system of a monster.

"The intake receptors are on the roof," the Master said. "They could be here as well, but it's traditional, I'm told, to place them on the roof." We climbed a flight of stairs. The roof was covered with multihelixed arrays, pointing in all directions, covering this hemisphere of the sky. "How about the other side?" I asked.

"There's a similar receptor complex over there—or down there, straight down from here. It feeds into this place by microwave relay." We went down the stairs, then, and to the console.

The Master greeted the Scientists, and introduced me—Brown Tunic Rockwell. One of the Scientists showed me around, the Master coming along, interested. Each experimental planet out there was on display here. The elaborate inputs to the large pan-

els on the three walls were here condensed into digital readouts. I saw that, in most cases, then parameters were being monitored usually to seven significant figures. Above each digital readout was printed, in green, the value which must not be exceeded—the value which said a planet was about to die. Each panel bore, for each parameter under observation, three pilot lights—red, yellow, and green. There was also a green push button, immediately below which were two spaces for the insertion of keys. The button had no label and it didn't need one—they knew what it was for. Almost all of the lights were red, a few were yellow. No green showing.

I got it. Red was in the clear, yellow was approaching danger, and when the green went on you turned the keys and pushed the

green button. Minus one planet.

"How does Korsakoff Five look?" the Master asked.

"No better. Any day now." He showed us the Korsakoff Five panel. There were nine reds, but the carbon monoxide showed yellow. The seventh digit was in almost continual change, advancing and retreating, but, the Scientist said, steadily closing the gap. It had about a hundred to go—a hundred units in parts per million, that is. The first five digits coincided with the stated limit.

"You see, Rockwell, why we've been talking of Korsakoff—his fifth planet will almost certainly be the next one to go," the Master said. I nodded, and I spent several hours wandering about the room, getting the feel of the place. I happened to be standing before one display (Wilkinson Four) when the radioactivity light

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went from red to yellow. A spooky feeling.

I spent a few more days hanging around Planetary Watch, and it seemed my sentence should be served by now, but—not quite. During the evening of the third day Master Clarke called me and told me to meet him at Planetary Watch. I did so; he was waiting at the elevator when I arrived. He palmed the panel and spoke into a concealed microphone and up we went. A different shift of Scientists was on duty now, and they were all watching the large Korsakoff Five panel on the wall. The graphic readout showed that the carbon monoxide line was about to intersect the line of the limit. You could see it happening on the digital display at the console, of course, but this was more dramatic.

I watched, hypnotized, as the lines did intersect. The yellow changed to green, and a gentle but persistent tone began to sound.

"This could be automated, of course," the Master said, "but we prefer to do it by hand. Come to the console." We all went. Two of the Scientists inserted—with a business-like air—their keys into the slots beneath the green button and turned them a quarter turn. Clockwise, I noted.

"Now," the Master said, "if you will?" He indicated the green button.

"I—" It seemed too much.

"This will complete your sentence," he said, the Scientists standing there watching, listening.

Well. What do you do when asked to blast a planet—full of people—into subatomic particles? In my situation you push a button. I did. Nothing happened.

"In about ten minutes—through hyperspace," the Master said, and he and I returned to the large display on the wall. The Scientists went back to their routine.

"Why do it this way?" I asked, having done it. "The planet will die anyway."

"A dying planet is a bad thing. This is more—humane."

Silently we watched. Then, almost casually, as if closing up shop for the night, the lights went out. The polygraphs stopped, and ten needles abruptly flopped to zero. End. Not knowing what to say, I said nothing.

The Master opened a package he'd been carrying. My purple robe! I shucked off the detestable brown tunic and proudly put on the purple. Musician and Poet again. We left that place.

"Korsakoff Five over and done with," the Master said, "It's real name was Terra but we didn't think of it as such." I was anxious to be gone, I had to practice upon my instruments, write some lines. "That's the last one of the lot— and a good thing too. Korsakoff was a lousy geneticist. Good night, Rockwell." ★



THE TEACHER

LARRY EISENBERG

IT WAS a butterfly, the brightly painted wings twinkling over the stiff green blades of grass. It hovered, dipped and finally lighted on a faded purple stalk of clover. Another butterfly came along and another. Each one lighted beside the first until at last there was a canopy of yellow and black over the nodding heads of clover.

"Start again," said the teacher and grass, clover and butterflies all vanished.

Now a sidewalk appeared, tar and gum smeared, streaked with cracks over the cement coating. Feet passed over it again and again, pairs of feet, dozens of feet, hundreds of feet. Soon they were as densely packed as sheaves of corn in a silo. A whistle blew, the feet shuffled and then went up in a puff of smoke.

"Fair," said the teacher. "Considerable improvement over the first try, but you've far to go."

The class was over. The students dispersed, each one secretly elated over the skills he had shown that day. The teacher sighed over the dearth of real talent among the neophytes. He sat back and ruminated over the kinds of classes he'd had in years past.

"Those kids had the stuff," he said to himself and he flushed at the realization that he had spoken aloud.

LATER that night he discussed his feelings with Marie. She shook her head in disagreement.

"They haven't changed. It's you," she said. "I think you're jealous of them because they will be the doers and you will stay a teacher."

"Nonsense," he said acerbically. "I could be a doer. I just don't choose to. I've been through a more rigorous training course

than any of them. I've dreamed up teeming cities, motley populations, sagas of heroes and cowards, ravaging plagues and Golden ages. I've drawn poets and philosophers, hooligans and bullies."

She smiled.

"I know you have," she said. "You've even shown me bits and pieces of it. But there's a gap between theory and practice. And you're missing an important ingredient."

"I suppose it's my disbelief in the supernatural," he said. "Even you call me an atheist."

She sighed.

"No," she said. "It's compassion."

The night grew cold and she began to shiver. He took her hand and stroked it until the blue tint became suffused with a darkening red. He put his mouth to her neck and, with his mind still on the unrealized greatness inside him, he whispered into the sweet scented skin. She enfolded him in her arms and drew him down beside her.

HE AWOKED refreshed but still very much on edge. He hadn't corrected any of the students' homework nor had he prepared his lesson plan for the day. He went inside and showered, letting the soapy warm water caress his sleep-drenched skin, and he shook his head and growled. Later, after

he had eaten, he read the contents of each folder, penciling in his comments, sometimes terse, occasionally scathing. In rare instances he was almost complimentary.

Marie is wrong. I'm not jealous of the students. I have more imagination and talent than the whole lot of them...

He had put aside one of the folders after a cursory look and later, when he reopened and read it, he knew why. It was superb. The language was inspired, simple yet poetic, with an epic sweep. The characters were dynamic, violent and gentle by turns, moral and amoral, lovely and hideous. They were tormented and inspired. He was caught up in all of it and saw each scene unfold before his eyes. And he hated the student who had written this brilliant scenario.

If only it were mine—What a job I could do with this...

He would modify it here and there, he decided. Perhaps he ought to add the necessary little touches that would turn it into a viable scheme. And of everyone he knew, he alone had the maturity and discipline, the courage and craftsmanship to see it through.

"I can be a doer," he said aloud and the words were like a heady wine.

HE HELD on to the folder. He told the student that his grade was an A-minus but that he had

misplaced the manuscript. Secretly he studied it, fleshed it out, gave it his own subtle flavor until he was certain it was ready. Then he typed it up himself, placed his own name on the title page and sent it in to the Council of Critics.

One week later he was summoned to their chambers. They were overwhelmed by this extraordinary work, they said, and he would be given permission to put it on.

His heart was racing out of control.

"When will that be?" he said. He could barely talk.

"Tomorrow, if you like. It will be a private showing for the Council alone."

He was assigned his stage and asked to begin. But was he ready? He became terrified at bringing this awesome script to life and was assailed by self doubts. Was he really up to it? And what if the student should discover the plagiarism and expose him? There was total silence in the auditorium and a hushed expectation that wound about his body like a shroud. With trembling fingers, he turned the title page of the scenario and silently reread his opening lines:

"In the beginning God created the heaven and the earth. And the earth was without form, and void; and darkness was upon the face of the deep."

He drew a deep breath and then he began. ★



LT. JOHN GRIMES, captain of the Serpent Class Courier *Ad-der*, was in a bitter and twisted mood. He had his reasons. To begin with, he had just been hauled over the coals by Commodore Damien, Officer Commanding Couriers, and still resented being blamed for the disappearance of Cragge Rock from Olgana. Then he had been told that his ship's stay at Lindisfarne Base was to be a very

short one—and Dr. Maggie Lazenby, with whom he hoped to achieve something warmer than mere friendship, was off planet and would not be returning until after his own departure. Finally, he had seen the latest Promotion List and had noted that officers junior to himself had been given their half rings, were now Lieutenant Commanders. And some of those same officers, in Grimes' words, wouldn't be capable of navigating a plastic duck across a bathtub.

Whom you know is important. What you know is vital. But what you know about whom can be dynamite!

WHAT YOU KNOW

A. BERTRAM CHANDLER



Ensign Beadle, his first lieutenant, was sympathetic. He said, "But it isn't what you do, Captain. It isn't what you know, even. It's whom you know."

"You could be right, Number One," admitted Grimes. "But in my case I'm afraid that it boils down to who knows me. Did you ever see that book, *How To Win Friends And Influence People*? I often think that I must have read the wrong half, the second half."

Beadle made a noncommittal

noise. Then: "We're ready to lift ship, Captain. Mechanically, that is. Mr. Hollister, the new Psionic Radio Officer, has yet to join—and, of course, there are the passengers."

"Ah, yes. Let us not forget the passengers." Grimes allowed himself a sardonic smile. "I wonder what the Commodore has against them?"

Beadle took the question literally. "We're the only Courier in port, Captain, and it's essential that

our good Commissioner reaches Dhartana as soon as possible"

"—if not before," finished Grimes. "All right, Number One. Is the V.I.P. suite swept and garnished?"

"I—I've been busy with the *important* preparations for Space, Captain."

Grimes scowled. "I sincerely hope, Number One, that Mrs. Commissioner Dalwood never hears you implying that she's unimportant. We'll make a tour of the accommodation *now*."

Followed by Beadle, he strode up the ramp into the airlock of his little ship, his "flying darning needle." The V.I.P. suite took up almost the entire compartment below the officers' flat. As he passed through the sliding door into the sitting room Grimes' prominent ears reddened; with him it was a sign of anger as well as of embarrassment. "Damn it all, Number One," he explained, "don't you realize that this woman is one of the civilian big wheels on the Board of Admiralty? You may not want promotion—but I do. Look at that table top! Drinking glass rings—and it must have been something sweet and sticky--and bloody nearly an inch of cigarette ash. And the ashtrays! They haven't been emptied since God was a pup."

"The suite hasn't been used since we carried Mr. Alberto."

"I know that. Am I to suppose

that you've kept it the way he left it in loving memory of him?"

"You did say, sir, that bearing in mind the circumstances of his death we should leave everything untouched in case his department wanted to make a thorough investigation."

"And his department did check just to make sure that he'd left nothing of interest on board when he disembarked on Doncaster. But that was months ago. And this bedroom—the way it is now I wouldn't put a dog into it. Get on the blower at once to Maintenance. Ask them—no, *tell* them—to send a cleaning detail here immediately."

Grimes became uncomfortably aware that someone breathed behind him. He turned slowly, reluctantly, looked into the hard, steel-gray eyes of the woman who was standing just inside the doorway.

She was tall and handsome, with short-cut platinum blond hair, a beautifully tailored gray costume that looked like a uniform but wasn't—that looked more like a uniform than the deliberately casual rig of the day affected by Grimes and Beadle in common with all Courier Service officers. Her figure seemed to be that of a girl—but her face, although unlined, was old. It showed no physical marks of age, but it was somehow obvious that she had seen too much, experienced too much.

Grimes thought, *If she smiles, something will crack.*

She didn't smile.

She said—and her voice, although well modulated, was hard as the rest of her—"Mr. Grimes."

"Ma'am?"

"I am Commissioner Dalwood."

She did not extend her hand. Grimes bowed stiffly. "Honored to have you aboard, Ma'am."

"The honor is all yours, Mr. Grimes. Tell me, is the rest of your ship like this pigsty?"

"We're having the suite put to rights, Mrs. Dalwood."

"Pray do not put yourself out on my behalf, Mr. Grimes. My lady's maid and my two robot servants are at this moment bringing my baggage aboard. The robots are versatile. If you will let them have the necessary cleaning gear they will soon have these quarters fit for human occupancy."

"Mr. Beadle," ordered Grimes, "Belay that call to Maintenance. See that Mrs. Dalwood's servants are issued what they need."

"Very good, sir," replied Beadle smartly, glad of the chance to make his escape.

"And now, Mr. Grimes, if I may sit down somewhere in less squalid surroundings—"

"Certainly, Ma'am. If you will follow me—"

GRIMES led the way out of the suite. The two humanoid ro-

bots, with expensive-looking baggage piled at their feet, stared at him impassively. The maid—small, plump, pert and darkly brunette—allowed a flicker of sympathy to pass over her rosy face. Grimes thought that she winked, but he couldn't be sure. On the way up to his own quarters he was relieved to see that Beadle had kept the rest of the ship in a reasonably good state of cleanliness, although he did hear one or two disapproving sniffs from his passenger. His own day cabin was, he knew, untidy. He liked it that way.

He was not surprised when Mrs. Dalwood said, "Your desk, Mr. Grimes. Surely some of those papers are of such a confidential nature that they should be in your safe."

Grimes said, "Nobody comes in here except by invitation. I trust my officers, Ma'am."

The Commissioner smiled thinly. Nothing cracked. She said, "What a child you are, Lieutenant. One of the first lessons I learned in politics was never to trust anybody."

"In Space, aboard ship, you have to trust people, Ma'am."

She sat down in Grimes' easy chair, extending her long, elegant legs. Grimes suspected that she looked at her own limbs with brief admiration before returning her regard to him. Her laugh was brittle.

"How touching, Lieutenant.

And that is why ships are lost now and again."

"May I offer you refreshment, Ma'am?" Grimes said, changing the subject.

"And do *you* drink, Lieutenant?"

I know damn well that I'm only a two ringer, Grimes thought, *but I do like being called Captain aboard my own ship...*

He said, "Never on departure day, Mrs. Dalwood."

"Perhaps I shall be wise if I conform to the same rule. I must confess that I am not used to traveling in vessels of this class and it is possible that I shall need all my wits about me during lift-off. Might I ask for a cup of coffee?"

Grimes took from its rack the thermos container, which he had refilled from the galley coffee-maker that morning. After he had removed the cap he realized that he had still to produce cup, sugar bowl, spoon and milk. His telltale ears proclaiming his embarrassment he replaced the container, conscious of the woman's coldly amused scrutiny. At last he had things ready, finally filling the jug from a carton of milk in his refrigerator.

She said, "The milk should be warmed."

"Yes, Mrs. Dalwood. Of course. If you wouldn't mind waiting just one moment—"

"If I took my coffee white I

should mind. But I prefer it black and unsweetened."

Grimes poured, remembering that the coffee-maker was long overdue for a thorough cleaning. *Adder's* coffee had a tang of its own. Her people were accustomed to it. The Commissioner was not. After one cautious sip she put her cup down, hard.

She asked, "And what is the food like aboard this ship?"

"Usually quite good, Ma'am. We carry no ratings or petty officers, so we take turns cooking. Mr. Beadle—he's my First Lieutenant—makes an excellent stew." Grimes babbled on. "It's a sort of a curry, actually, but not quite, if you know what I mean."

"I don't, Lieutenant. Nor do I wish to. As I have already told you, my robots are versatile. Might I suggest that they take over galley duties, first of all thoroughly cleaning all vessels and implements, starting with your coffee-maker? Apart from anything else it will mean that your officers will have more time to devote to their real duties."

"If you want it that way, Mrs. Dalwood—"

"I do want it that way."

To Grimes' intense relief the intercom phone buzzed. He said to the Commissioner, "Excuse me, Ma'am," and then into the speaker/microphone, "Captain here."

"First Lieutenant, Captain. Mr. Hollister, the new P.C.O., has just

boarded. Shall I send him up to report to you?"

"Yes, Mr. Beadle. Tell him that I'll see him in the Control Room. Now." He turned to Mrs. Dalwood. "I'm afraid I must leave you for a few minutes, Ma'am. There are cigarettes in that box, and if you wish more coffee—"

"I most certainly do not. And, Mr. Grimes, don't you think that you had better put those papers away in your safe before you go about your pressing business?" She allowed herself another thin smile. "After all, you haven't asked yet to see my identification. For all you know I could be a spy."

And if you are, thought Grimes, *I hope I'm the officer commanding the firing squad.*

He said, "You are very well known, Ma'am."

He swept his desk clean, depositing the pile of official and private correspondence on the deck, then fumbled through the routine of opening his safe. As usual the door stuck. Finally he had the papers locked away. He bowed again to Mrs. Dalwood, who replied with a curt nod. He climbed the ladders to Control, glad to get to a part of the ship where, Commissioner or no Commissioner, he was king.

Beadle was awaiting him there with a tall, thin, pale young man who looked like a scarecrow rigged out in a cast-off Survey Service uniform. He announced, before Beadle could perform the

introductions, "I don't like this ship. I am very sensitive to atmosphere. This is an unhappy ship."

"She didn't use to be," Grimes told him glumly.

USUALLY Grimes enjoyed ship-handling. Invariably he would invite his passengers to the control room during lift-off, and most times this invitation would be accepted. He had extended the courtesy to Mrs. Dalwood, hoping that she would refuse the offer. But she did not. She sat in the spare acceleration seat, saying nothing but noticing everything. It would almost have been better had she kept a continual flow of *Why-do-you-do-this?* and *Why-don't-you-do-that?*

Her very presence made Grimes nervous. The irregular beat of the inertial drive sounded wrong to him as *Adder* climbed slowly up and away from her pad. And, as soon as she was off the ground, the ship yawed badly, falling to an angle of seven degrees from the vertical. It must look bad, Grimes knew. It looked bad and it felt worse. The only thing to do about it was to get upstairs in a hurry before some sarcastic comment from Port Control came through the transceiver. Grimes picked his moment for turning on the auxiliary rockets, waiting until the tall, slender tower that was *Adder* was canted away from the wind.

That way, he hoped, he could make it all look intentional, convey the impression that he was using the quite stiff north-wester to give him additional speed.

He managed to turn in his seat in spite of the uncomfortable acceleration and force out the words;

"Letting — the — wind — help — us —"

She—calm, unruffled—lifted her slender eyebrows and asked, with apparently genuine unconcern, "Really?"

"Time—" Grimes persisted, "is—money."

"So," she told him, "is reaction mass."

Flushing, Grimes returned to his controls. Apart from that annoying yaw the ship was handling well enough. Beadle, and Von Tannenbaum, the navigator, and Slovtovny, electronic communications, were quietly efficient at their stations. They were certainly quiet. There was none of the usual good-humored banter.

Sulkily Grimes pushed *Adder* up through the last, high wisps of cirrus, into the purple twilight, towards the bright, unwinking stars. She screamed through the final tenuous shreds of atmosphere and quite soon thereafter Von Tannenbaum reported that she was clear of the Van Allens. Grimes, still far too conscious of the Commissioner's cold regard, cut inertial and reaction drives, then slowly and carefully—far

more slowly than was usual—used his directional gyroscopes to swing the sharp prow of the ship on to the target star. He applied correction for Galactic Drift—and then realized that he had put it on the wrong way. He mumbled something that sounded unconvincing even to himself about overcompensation and, after a few seconds that felt more like minutes, had the vessel headed in the right direction.

He wondered what would happen when he started the Mannschenn Drive—but nothing did; nothing, that is, worse than the familiar but always disquieting sense of *deja vu*. He had a vision of himself as an old, old lieutenant with a long white beard—but this had nothing to do with the temporal precession field of the Drive, was induced rather by the psionic field generated by the Commissioner. He didn't like her and had a shrewd suspicion that she didn't like him.

She said, "Very educational, Mr. Grimes. Very educational."

She unstrapped herself from her chair. Slovtovny and Von Tannenbaum got up from their own seats, each determined courteously to assist her from hers. They collided. Von Tannenbaum tripped and fell and Beadle fell over him.

"Very educational," repeated the Commissioner, gracefully extricating herself from her chair, unaided. "Oh, Mr. Grimes, could

you come to see me in ten minutes' time? We have to discuss the new galley routine."

"Certainly, Mrs. Dalwood." Grimes turned to his embarrassed officers. "Deep Space Routine, Mr. Beadle." Usually he said, "Normal Deep Space Routine," but he had a suspicion that things would not be at all normal.

II

THINGS were not normal.

Usually *Adder's* people were gourmands rather than gourmets and a certain tightness of waistbands was an accepted fact of life. Even when whoever was doing the cooking produced an inedible mess bellies could be filled, and were filled, with sandwiches of the doorstep variety. But these relatively happy days were over.

As she had told Grimes, the Commissioner's robots were skilled cooks. To have called them chefs would not have been exaggerating. Insofar as subtlety of flavorings and attractiveness of presentation were concerned, nobody could fault them. To the average spaceman, however, quantity is as important as quality. There were no second helpings. The coldly efficient automatons must have calculated just how much nutriment each and every person aboard required to operate efficiently himself—and that was all that he ever got. Too, at least one of the mechanical ser-

vitors was always doing something or other around the galley and storerooms and Grimes and his officers knew that the partaking of snacks between meals would be reported at once to Mrs. Dalwood.

A real Captain, one with four gold bands on his shoulderboards and scrambled egg on the peak of his cap, would never have tolerated the situation. But Grimes, for all his authority and responsibility, was too junior an officer. He was only a Lieutenant, and a passed-over one at that, while the Commissioner, although a civilian, could tell Admirals to jump through the hoop.

But he was hungry.

One morning, ship's time, he went down to the solarium for his daily exercises. This compartment could more aptly have been called the gymnasium, but since it was part of the "farm" it got its share of the ultraviolet required for the hydroponics tanks. Mrs. Dalwood and her maid, Rosa-leen, were still there, having their daily workout, when Grimes went in. Always he had managed to arrive after the two women had finished, but for some reason he was running ahead of schedule. It was not that he was prudish and neither were they, but he had decided that the less he had to do with them the better.

As he entered the room he noticed their gowns hanging outside the sauna. He shrugged. So what?

This was his ship. He took off his own robe and then, clad only in trunks, mounted the stationary bicycle. He began to pedal away almost happily, watching the clock as he did so.

From the corner of his eye he saw the door of the sauna open. The Commissioner, followed by her maid, came out. It was the first time he had seen Mrs. Dalwood nude. Prompted to whistle, he thought better of it. She was a bit of all right, he admitted, if you liked 'em lean and hungry. He inclined his head towards her courteously, carried on pedaling.

Rather to his surprise she stood there, looking him over.

She said, "Mr. Grimes, there is a little improvement in your condition, but that probably is due to a properly balanced diet." She walked toward him, her feet slim and elegant on the carpeted deck, her breast jouncing ever so slightly. "Get off that thing, will you?"

Grimes did so, on the side away from her. She stooped with fluid grace and tested the pedals with her right hand.

"Mr. Grimes, how in Space do you hope to get any benefit from these exercises unless you do them properly?" Her hand went to the adjusting screw of the roller on top of the wheel, turned it clockwise. The muscles of her right arm stood out clearly under the smooth brown skin as she tested the pedals again. Then she actual-

ly smiled, saying, "On your bicycle, spaceman."

Grimes remounted. He had to push hard to start the wheel rotating. He had to push hard to keep it rotating. Now and again he had ridden on real bicycles, but almost always had dismounted rather than pedal up a steep hill. She stood watching him. Until now he would have thought it impossible actively to dislike an attractive naked woman. But there had to be a first time for anything.

The Commissioner turned to her maid. "Rosaleen, you were last on the bicycle. Did you readjust it?"

The girl blushed guiltily over her entire body. "Yes, Ma'am."

"I see I shall have to check on you too." The woman glanced at the watch that was her only article of clothing. "Unluckily I have some work to do. However, you may stay here for another thirty minutes. The bicycle again, the rowing machine, the horizontal bars. And you, Mr. Grimes, will see to it that she does something about shedding that disgusting fat."

Grimes did not say what he was thinking. He had little breath to say anything. He managed to gasp, "Yes, Ma'am."

Mrs. Dalwood went to her gown, shrugged it on, thrust her feet into sandals. She walked gracefully to the door. She did not look back at the man on the bicycle, the girl on the rowing machine.

As soon as the door had shut behind her Rosaleen stopped rowing.

She said, "Phew!"

Grimes went on pedaling.

"Hey, Captain. Take five. Avast, or whatever you say."

Grimes stopped.

He said, "You'd better carry on with your rowing."

The girl grinned. "We're quite safe, Captain. *She* is so used to having every order implicitly obeyed that she'd never dream of coming back to investigate us."

"You know her better than I do," admitted Grimes.

"I should." She got up from the sliding seat of the rowing machine, flopped down to the deck. She was, Grimes decided, at least as attractive as her mistress and she had the advantage of youth. And there was so much more of her. The spaceman looked her over, studying her almost clinically. Yes, she had been losing weight. Her skin was not as taut as it should have been.

She noticed his look. She complained, "Yes, I'm starved."

"You get the same as we do, Rosaleen."

"That's the trouble, Captain."

"But you have this sort of feeding all the time."

"Like hell I do. I have my nights off, you know, and then I catch up on the pastries and candy and the hot rolls with lots of butter, and the roast pork, with crackling—"

"Please stop," begged Grimes. "You're making me ravenous."

She went on, "But aboard your ship I have to toe the line. There's no escape."

"I suppose not."

"But surely *you* can do something. You've storerooms, with bread—"

"Yes, but—"

"You aren't scared of *her*, Captain?" She looked at him through big, dark eyes. He had thought they were black—now he saw that they were a very deep violet.

"Mphm." He allowed his glance to stray downwards, then hastily looked back at her face. Invitation had been in every line of her ample body. He was no snob and the fact that her status was that of a servant weighed little with him. But she was the Commissioner's servant. A lady has no secrets from her lady's maid—was the converse true? Anyhow, both were women and no doubt happily prattled to each other, disparity of social status notwithstanding.

She said plaintively, "I'm hungry, Captain."

"So am I, Rosaleen."

"But you're the Captain."

Grimes got off the bicycle. He said, "It's time for my sauna."

He threw his shorts in the general direction of the hook on which his robe was hanging, strode to the door of the hot room, opened it. She followed him. He stretched

out on one of the benches, she flopped on one opposite him.

She said, "I'm hungry."

"It's those damned robots," complained Grimes. "Always hanging around the galley and storerooms."

"They won't be there tonight."

"How do you know?"

"They're much more than cooks. Even I don't know all the things they've been programed for. This I do know. *She* has been working on a report, and tomorrow it will be encoded for transmission. The way that *she* does it is to give it to John—he's the one with the little gold knob on top of his head - to encode. And James decodes each sheet as John finishes it, to ensure that there are no errors."

"Are there ever any?"

"No. But *she* likes to be sure."

"*She* would." He wondered when he was going to start sweating. The girl was already perspiring profusely. "Tell me, when does this encoding/decoding session take place?"

"After dinner."

"And there's no chance of her breaking it off?"

"None at all."

"Mphm." The sweat was starting to stream out of Grimes' pores now. The girl got up, began to flick the skin of his back lightly with the birch twigs. He appreciated the attention. "Mphm. And are you free while all this Top Secret stuff is going on?"

"Yes."

"And she should have her nose stuck into it by twenty hours?"

"Yes, Captain."

"Then meet me outside the galley at, say, fifteen past twenty."

"Yes!"

"Thick buttered toast," murmured Grimes, deciding that talking about food took his mind off other things.

"*Lots* of butter," she added.

"And sardines."

"Fat, oily sardines."

"With lemon wedges."

"With mayonnaise," she corrected.

"All right. Mayonnaise."

"And coffee. With sugar and great dollops of cream."

"I'll have beer, myself, even though it is fattening."

"We can have beer with— and coffee after."

The door slid open and Hollister came in. Naked, the telepath looked more like a living skeleton than ever. Grimes regarded him with some distaste and wondered if the psionic radio officer had been eavesdropping. To do so would be contrary to the very strict code of the Rhine Institute—but espers, in spite of their occasional claims to superiority, were only human.

He said, "I'm just about cooked, Rosaleen."

"So am I, Captain." She got up from her bench, the perspiration pouring down her still plump

body, went through into the shower room. Through the closed door Grimes heard the hiss of the water, her little scream as its coldness hit her. There was the whine of the blowers as she dried off and then she ran through the hot room on her way back into the solarium.

"Quite a dish, Captain," commented Hollister.

"We," Grimes told him coldly, "are neither kings nor peasants."

He took his own cold shower and when he stepped out into the gymnasium Rosaleen was gone.

DINNER that night was as unsatisfying as usual. A clear soup, a small portion of delicious baked fish with a green salad, a raw apple for desert. Grimes, at the head of the table, tried to make conversation, but the Commissioner was in a thoughtful mood and hardly spoke at all. Beadle, Slovozny, Vitelli and Hollister wolfed their portions as though eating were about to be made illegal, saying little. The four officers excused themselves as soon as they decently could—Slovozny going up to Control to relieve Von Tannenbaum for his dinner, Beadle to have a look at the air circulatory system, Vitelli to check up on the Mannschenn Drive. Hollister didn't bother to invent an excuse. He just left. Von Tannenbaum came down, took his place at the table. He was starting to acquire a lean and hungry look

that went well with his Nordic fairness. The Commissioner nodded to him, then patted her lips gently with her napkin. Grimes, interpreting the signs correctly, got up to help her from her chair. She managed to ignore the gesture.

She said, "You must excuse me, Mr. Grimes and Mr. von Tannenbaum. I am rather busy this evening."

"May I, or my officers, be of any assistance?" asked Grimes politely.

She took her time replying, and he was afraid that she would take his offer. Then she said, "Thank you, Mr. Grimes. But this is very confidential work and I don't think that you have Security clearance."

The refusal may have been intended as a snub but Grimes welcomed it.

"Good night, Ma'am."

"Good night, Mr. Grimes."

Von Tannenbaum turned to the serving robot which was waiting until he had finished his meal. "Any chance of another portion of fish, James?"

"No, sir," the thing replied in a metallic voice. "Her Excellency has instructed me that there are to be no second helpings for anybody."

"Oh."

In sulky silence the navigator finished his meal. Grimes was tempted to include him in the sup-

per party, but decided against it. The fewer people who knew about it the better.

The two men rose from the table, each going to his own quarters. In his day cabin Grimes mixed himself a drink, feeling absurdly guilty as he did so.

Damn it all, this is my ship. I'm Captain of her, not that cast iron bitch!

Defiantly—but why *should* he feel defiant?—he finished what was in his glass, then poured another generous portion. But he made it fast, looking frequently at his clock as he sipped.

2014. . .

Near enough.

He walked out to the axial shaft, tried not to make too much noise going down the ladder. He paused briefly in the officers' flat, on the deck below and abaft his own. Faint music emanated from behind the door of Von Tannenbaum's cabin—Wagner? It sounded like it—and loud snores from inside Beadle's room. His own air circulatory system could do with overhauling, thought Grimes. Slovtovny was on watch and Hollister, no doubt, was wordlessly communicating with his psionic amplifier, the poodle's brain in aspic.

Vitelli could be anywhere, but was probably in the engineroom.

The V.I.P. suite was on the next deck down. As he passed the door Grimes could hear the Commis-

sioner dictating something, one of the robots repeating her words. That took care of her. Another deck, with cabins for not very important people. . . He thought of tapping on Rasaleen's door, then decided against it. In any case, she was waiting for him outside the galley.

She whispered, "I was afraid you'd change your mind, Captain."

"Not bloody likely."

HE LED the way into the spotless—thanks to the industry of the robot servitors—galley. He was feeling oddly excited. He was reminded of his training cruise, when he had been a very new (and always hungry) cadet. But then there had been locks to pick.

He opened the door of the tinned food storeroom, ran his eye over the shelves. He heard Rosaleen gasp.

"New Erin ham—Carinthian sausage—"

"You'll have Atlantan sardines, my girl, and like 'em—ah, here we are. A can each?"

"Two cans."

"All right. Here you are. You can switch on the toaster while I rummage in the bread locker."

He thrust the cans into her eager hands, then collected bread, butter and seasonings. He tore open the wrapper of a loaf, put the thick slices on the rack under the griller. The smell of the cooking toast

was mouthwatering—too mouthwatering. He hoped that it would not be distributed throughout the ship by the ventilation system. But the Commissioner's overly efficient robots must, by this time, have put the air out-take filters to rights.

One side done. He turned the slices over.

Rosaleen asked plaintively, "How *do* you work this opener?"

A metallic voice replied, "Like this, Miss Rosaleen—but I forbid you to use it."

"Take your claws off me, you tin bastard!"

Grimes turned fast. Behind him the toast smoldered unheeded. His hands went out to clamp on the wrists of the robot, whose own hands gripped the girl's arms. The automaton ignored him. If it could have sneered it would have done so.

"Mr. Grimes. Rosaleen." The Commissioner's voice was hard as metal. In her all-grey costume she looked like a robot herself. "Mr. Grimes, please do not attempt to interfere with my servitor." She looked coldly at the little group. "All right, John, you may release Miss Rosaleen. But not until Mr. Grimes has taken his hands off you. And now, Mr. Grimes, what is the meaning of this? I seem to have interrupted a disgusting orgy. Oh, Joh, you might extinguish that minor conflagration and dispose of the charred remains."

"Supper," said Grimes at last.

"Supper?"

"Yes, Ma'am. Rosaleen and I were about to enjoy a light snack."

"A light snack? Don't you realize the trouble that went into working out suitable menus for this ship?" She paused, looking at Grimes with an expression of extreme distaste. "Legally since your superiors, in a moment of aberration, saw fit to appoint you to command, you may do as you like aboard this vessel—within limits. The seduction of my maid is beyond those limits."

"Seduction?" This was too much. "I assure you that—"

"I was not using the word in its sexual sense. Come, Rosaleen, we will leave Mr. Grimes to his feast. He has to keep his strength up—although for what I cannot say."

"Ma'am!" The girl's face was no longer soft, her voice held a compelling ring. "Since you use that word—it was I who seduced the Captain."

"That hardly improves matters, Rosaleen. The commanding officer of a warship, even a very minor one, should not allow himself to be influenced by a woman passenger."

"You said it," snapped Grimes. This could mean the ruin of his career but he had been pushed too far. "You said it, Mrs. Dalwood. I should never have let myself be influenced by you. I should never

have allowed your tin dieticians to run loose in my galley. I should have insisted, from the very start, on running *my* ship *my* way. Furthermore—" He was warming up nicely. "Furthermore, I doubt if even your fellow Commissioners will approve of your ordering an officer to spy on his Captain."

"I don't know what you're talking about, Mr. Grimes."

"Don't you, Mrs. Dalwood? Who put you wise to this little party in the galley? Who would have known about it? Who but Hollister? I shouldn't like to be in your shoes when the Rhine Institute gets my report on my psionic radio officer. They're no respecters of admirals—or commissioners."

"Have you quite finished, Mr. Grimes?" With the mounting flush on her cheeks the Commissioner was beginning to look human.

"For the time being."

"Then let me tell you, Lieutenant, that whatever secrets Lieutenant Hollister may have learned about you are still safely locked within his mind. If you had been reading up on the latest advances in robotics—which, obviously, you have not—you would have learned that psionic robots, electronic telepaths, are already in production. This has not been advertised—but neither is it a secret. Such automata can be recognized by the little gold knob on top of their skulls."

The robot John inclined its head toward Grimes and the golden embellishment seemed to wink at him sardonically.

"You tin fink," snarled the spaceman.

"I am not a fink, sir. A fink is one who betrays his friend—and you were never a friend to me and my kind. Was it not in this very vessel, under your command, that Mr. Adam met his end?"

"That will do, John," snapped the Commissioner.

"I still resent being spied upon."

"That will do, Lieutenant."

"Like hell it will. I give you notice that I have resigned from the Survey Service. I've had a bellyful of being treated like a child."

"But that is what you are."

"Captain," Rosaleen was pleading. "Please stop it. You're only making things worse. Mrs. Dalwood, it was my fault. I swear that it was."

"Anything that happens aboard my ship is my fault," insisted Grimes.

"From your own mouth you condemn yourself, Lieutenant. I am tempted, as a Commissioner, to accept your resignation here and now, but I feel—" her features sagged, the outlines of her body became hazy, the gray of her costume shimmered iridescently—"Leef I tub—" She was her normal self again. "But I feel—" Again the uncanny change. "Lgef I tub—"

This is all I need . . .

Grimes listened to the sudden, irregular warbling of the Mannschenn Drive, recognized the symptoms of breakdown, time running backward and *deja vu*. He had another vision—but this time he was not an elderly Survey Service Lieutenant; he was an even more elderly Rim Runners Third Mate. They would be the only outfit in all the Galaxy that would dream of employing him—but even they would never promote him.

The thin, high keening of the Drive faded to a barely audible hum, then died as the tumbling, ever-precessing gyroscopes slowed to a halt. From the bulkhead speakers came Slovtovny's voice—calm enough, but with more than a hint of urgency.

"Captain to Control, please. Captain to Control—"

"On my way," Grimes barked into the nearest speaker/microphone. "Carry on with emergency procedure."

"All hands secure for Free Fall. All hands secure for Free Fall. The inertial drive will be shut down in precisely thirty seconds."

"What is happening, Mr. Grimes?" demanded the Commissioner.

"It should be obvious, even to you."

"It is. Just what one could expect from this ship."

"It's not the ship's fault. She's

had no proper maintenance for months."

He pushed past the women and the robot, dived into the axial shaft. The greater part of his journey to Control was made in Free Fall conditions. He hoped maliciously that the Commissioner was being spacesick.

NEITHER the Commissioner nor her robots had the gall to infest the control room. Grimes sat strapped into the command seat, surrounded by his officers.

"Report, Mr. Vitelli," he said to the engineer, who had just come up from the engineroom.

"The Drive's had it, Captain," Vitelli told him. A greenish pallor showed through the engineer's dark skin, accentuated by a smear of black grease. "Not only the governor bearings, but the rotor bearings."

"We have spares, of course."

"We should have spares, but we don't. The ones we had were used by the shore gang during the last major overhaul, as far as I can gather from Mr. McCloud's records. They should have been replaced—but all that's in the boxes is waste and shavings."

"Could we cannibalize?" asked Grimes. "From the inertial drive generators?"

"We could—if we had a machine shop to turn the bearings down to size. But that wouldn't do us much good."

"Why not?"

"The main rotor's warped. Until it's replaced the Drive's unusable."

Beadle muttered something about not knowing if it was Christmas Day or last Thursday. Grimes ignored this—although, like all spacemen, he dreaded the temporal consequences of Mannschenn Drive malfunction.

"Sparks—is anybody within easy reach? I could ask for a tow."

"There's *Princess Helga*, Captain. Shall I give her a call?"

"Not until I tell you. Mr. Hollister, have you anything to add to what Mr. Slovtny has told me?"

"No, sir." The telepath's deep-set eyes were smoldering with resentment, and for a moment Grimes wondered why. Then he realized that the man must have eavesdropped on his quarrel with the Commissioner, had "heard" Grimes' assertion that he, Hollister, had carried tales to Mrs. Dalwood.

I'm sorry, Grimes thought. But how was I to know that that blasted robot was a mind-reader?

"I should have warned you, sir," admitted Hollister. The others looked at Grimes and Hollister curiously. Grimes could almost hear them thinking, *Should have warned him of what?*

"*Princess Helga . . .*" murmured Grimes.

"Light cruiser, Captain," Slovtny told him. "Royal Skandian Navy."

"And is the Federation on speaking terms with Skandia?" wondered Grimes audibly. He answered his own question. "Only just. Well, there's no future—or too bloody much future—in sitting here until somebody really friendly chances along. Get the *Princess* on the Carlotti, Sparks. Give her our coordinates. Ask her for assistance. Perhaps her engineers will be able to repair our Drive, otherwise they can tow us to the nearest port."

"Shouldn't we report first to Base, Captain?" asked Slovtny.

Yes, we should, thought Grimes. But I'm not going to. I'll put out a call for assistance before Her Highness shoves her ear in. After that—she can have a natter to Base . . .

He said, "Get the signal away to *Princess Helga*. Tell her complete Mannschenn Drive breakdown. Request assistance. You know."

"Ay, Captain." Slovtny busied himself at his Carlotti transceiver. The pilot antenna, the elliptical Mobius strip rotating about its long axis quivered, started to turn, hunting over the bearing along which the Skandian cruiser, invisible to optical instruments, unreachable by ordinary radio—which, in any case, would have had far too great a time lag—must lie.

"Locked on," announced the radio officer at last. He pushed the button that actuated the calling signal. Then he spoke into the

microphone. "*Adder* to *Princess Helga*. *Adder* to *Princess Helga*. Can you read me? Come in, please."

THERE was the slightest of delays, and then the swirl of colors in the small, glowing screen coalesced to form a picture. The young woman looking out at them could have been *Princess Helga* (whoever *she* was) herself. She was blue-eyed, and hefty, and her uniform cap did nothing to confine the tumbling masses of her yellow hair.

"*Princess Helga* to *Adder*. I read you loud and clear. Pass your message."

"Complete interstellar drive breakdown," said Slovoṭny. "Request assistance—repairs if possible, otherwise tow. Coordinates . . ." He rattled off a string of figures from the paper that Von Tannenbaum handed him.

The girl was replaced by a man. He should have been wearing a horned helmet instead of a cap. His eyes were blue, his hair and beard were yellow. He grinned wolfishly.

He demanded, "Your Captain, please."

Grimes released himself from his chair, pulled himself into the one vacated by Slovoṭny.

"Lieutenant Grimes here, Officer Commanding Courier Ship *Adder*."

"Captain Olaf Andersen here, Lieutenant. What can I do for you?"

"Can your engineers repair my Drive?"

"I doubt it. They couldn't change a fuse."

"What about a tow to Dhartana?"

"Out of the question, Captain. But I can take you in to my own Base, on Skandia. The repair facilities there are excellent."

Grimes weighed matters carefully before answering. Skandia, one of the small, independent kingdoms, was barely on speaking terms with the Interstellar Federation. At the very best the Skandians would charge heavily for the tow, would present a fantastically heavy bill for the repair work carried out by their yard. (But he, Grimes, would not be paying it.) At the worst, *Adder* and her people might be interned, could become the focus of a nasty little interstellar incident, a source of acute embarrassment to the Survey Service. And so, Grimes asked himself mutinously, *what?* That Promotion List had made him dangerously dissatisfied with his lot; the Commissioner had strained what loyalties remained to the breaking point.

The Commissioner . . .

"What exactly *is* going on here?" she asked coldly.

She was getting into his hair again.

"I'm arranging a tow," Grimes told her. "The alternative is to hang here—" he gestured towards the viewports, to the outside blackness, to the sharp, bright, unwinking, distant stars—"in the middle of sweet damn all, thinking more and more seriously of cannibalism with every passing day."

"Very funny, Lieutenant." She stared at the screen. "Is that officer wearing *Skandian* uniform?"

"Of course, Madam," replied the Skandian Captain, who seemed to be very quick on the uptake. "Captain Olaf Andersen, at your service." He smiled happily. "And you, if I am not mistaken, are Mrs. Commissioner Dalwood, of the Federation's Board of Admiralty. According to our latest Intelligence reports you are *en route* to Dhartana." He smiled again. "Delete 'are'. Substitute 'were.'"

"Mr. Grimes, I forbid you to accept a tow from that ship."

"Mrs. Dalwood, as commanding officer of this vessel I must do all I can to ensure her safety and that of her people."

"Mr. Slovtorny, you will put through a call to Lindisfarne Base at once, demanding immediate assistance."

Slovtorny looked appealingly at Grimes. Grimes nodded glumly. The grinning face of the Skandian faded from the screen, was replaced by a swirl of color as the pilot antenna swung away from its

target. Sound came from the speaker—but it was a loud warbling note only.

The radio officer worked desperately at the controls of the Carlotti transceiver.

Then he looked up and announced, "They're jamming our signals; they have some very sophisticated equipment and they're only light-minutes distant."

"Are you sure you can't get through?" demanded the Commissioner.

"Quite sure," Slovtorny told her definitely.

She snorted, turned to Hollister. "Mr. Hollister, I'll have to rely on you."

"What about your own chrome-plated telepath?" Grimes asked her nastily.

She glared at him. "John's transmission and reception is only relatively short range. And he can't work with an organic amplifier, as your Mr. Hollister can."

"And *my* organic amplifier's on the blink," said Hollister.

"What do you mean?" demanded Grimes.

The telepath explained patiently. "There has to be a relationship between a psionic communications officer and his amplifier. The amplifier, of course, is a living dog's brain—"

"I know, I know," the Commissioner snapped. "Get on with it."

Hollister would not be hurried. "The relationship is that which

exists between a kind master and a faithful dog—but deeper, much deeper. Normally we carry our own personal amplifiers with us, from ship to ship, but mine died recently, so I inherited Mr. Deane's. I have been working hard, ever since I joined this ship, to win its trust, its affection. I was making headway, but I was unable to give it the feeling of security it needed when the temporal precession field of the Drive started to fluctuate. The experience can be terrifying enough to a human being who knows what is happening; it is even more terrifying to a dog. And so—"

"And so?"

"And so the amplifier is useless, possibly permanently." He added brightly: "But I can get in touch with *Princess Helga* any time you want."

"You needn't bother," she snarled. Then, to Grimes, "Of all the ships in the Survey Service, why did I have to travel in this one?"

Why? echoed Grimes silently. *Why?*

EVEN the Commissioner was obliged to give Captain Andersen and his crew full marks for spacemanship. *Princess Helga* emerged into normal Space/Time only feet from the drifting *Adder*. At one moment there was nothing beyond the courier's viewports but

the blackness of interstellar space, the bright, distant stars—at the next moment she was there, a vague outline at first but solidifying rapidly. She hung there, a great spindle of gleaming plastic and metal, the sleekness of her lines marred by turrets and antennae. Another second—and the shape of her was obscured by the tough, pneumatic fenders that inflated with almost explosive rapidity. Another second—and *Adder's* people heard and felt the thump of the magnetic grapnels as they made contact.

Andersen's pleasant, slightly accented voice came from the transceiver. "I have you, Captain. Stand by for acceleration. Stand by for resumption of Mannschenn Drive."

"I suppose that your temporal precession field will cover us?" asked Grimes.

"Of course. In any case there is physical contact between your ship and mine."

"Where are you taking us?" demanded Mrs. Dalwood.

"To Kobenhaven, of course, Madam. Our Base on Skandia."

"I insist that you tow us to the nearest spaceport under Federation jurisdiction."

"You insist, Madam?" Grimes, looking at the screen, could see that Andersen was really enjoying himself. "I'm sorry, but I have my orders."

"This is piracy!"

"Piracy, Madam? The captain

of your ship requested a tow and a tow is what he's getting. Beggars can't be choosers. In any case, Space Law makes it quite plain that the choice of destination is up to the officer commanding the vessel towing, not the captain of the vessel towed."

She said, almost pleading but not quite, "In these circumstances the Federation could be generous."

Andersen lost his smile. He said, "I am a Skandian, Madam. My loyalty is to my own planet, my own Service. Stand by for acceleration."

The screen went blank. Acceleration pushed the group in *Adder's* control room down into their chairs; Mrs. Dalwood was able to reach a spare seat just in time. Faintly, the vibration transmitted along the tow wires, they heard and felt the irregular throbbing of *Princess Helga's* inertial drive-- and almost coincidentally there was a brief period of temporal/spatial disorientation as the field of the cruiser's Mannschenn Drive encompassed both ships.

"You realize what this means to your career," said the Commissioner harshly.

"What was that?" asked Grimes. He had been trying to work out how it was that *Princess Helga* had been able to start up her inertial drive before the interstellar drive, how it was that there had been no

prior lining up on a target star.

"You realize what this means to your career," repeated the woman.

"I haven't got one," said Grimes. "Not any longer."

And somehow it didn't matter.

III

THE voyage to Kobenhaven was not a pleasant one.

The Commissioner made no attempt to conceal her feelings insofar as Grimes was concerned. Rosaleen, he knew, was on his side—but what could a mere lady's maid do to help him? She could have done quite a lot to make him less miserable, but her mistress made sure that there were no opportunities. The officers remained loyal—but not too loyal. They had their own careers to think about. As long as Grimes was captain they were obliged to take his orders and the Commissioner knew it as well as they did. Oddly enough, it was only Hollister, the newcomer, the misfit, who showed any sympathy. But he knew, more than any of the others, what had been going on—what was going on in Grimes' mind.

At last the two ships broke out into normal Space/Time just clear of Skandia's Van Allens. This Andersen, Grimes admitted glumly to himself, was a navigator and shiphandler of no mean order.

He said as much into the transceiver. The little image of the Skandian captain in the screen grinned out at him cheerfully.

"Just the normal standards of the Royal Skandian Navy, Captain. I'm casting you off, now. I'll follow you in. Home on the Kobenhaven Base beacon." He grinned again. "And don't try anything."

"What can I try?" countered Grimes with a grin of his own.

"I don't know. But I've heard about you, Lieutenant Grimes. You have the reputation of being able to wriggled out of anything."

"I'm afraid I'm losing my reputation, Captain." Grimes, through the viewports, watched the magnetic grapnels withdraw into their recesses in *Princess Helga's* hull. He and Andersen applied lateral thrust simultaneously. As the vessels surged apart the fenders were deflated, sucked back into their sockets.

Adder, obedient to her captain's will, commenced her descent towards the white and gold, green and blue sphere that was Skandia. She handled well, as well as Grimes had ever known her to do. But this was probably the last time that he would be handling this ship, any ship. The Commissioner would see to that. He shrugged. Well, he would make the most of it, would try to enjoy it. He saw that Beadle and Von Tannenbaum and Slovtny were looking

at him apprehensively. He laughed. He could guess what they were thinking.

"Don't worry," he told them. "I've no intention of going out in a blaze of glory. And now, Sparks, do you think you could lock on to that beacon for me?"

"Ay, Captain," Slovtny replied. And then, blushing absurdly, "It's a damn shame, sir."

"It will all come right in the end," said Grimes with a conviction that he did not feel. He shrugged again. At least that cast-iron bitch and her tin boy friends weren't in Control to ruin the bitter-sweetness of what, all too probably, would be his last pilotage.

Adder fell straight and true, plunging into the atmosphere, countering every crosswind with just the right application of lateral thrust. Below her, continents and seas expanded, features—rivers, forests, mountains and cities—showed with increasing clarity.

And there was the spaceport, and there the triangle of brilliant winking lights, in the center of which Grimes was to land his ship. He brought her down fast—and saw apprehension dawning again on the faces of his officers. He brought her down fast—and then, at almost the last possible second, fed the power into his inertial drive unit. She shuddered and hung there, scant inches above the concrete of the apron. And then the

irregular throbbing slowed, and stopped, and *Adder* was down, with barely a complaint from the shock absorbers.

"Finish with engines," said Grimes quietly.

He looked through the ports at the soldiers who had surrounded the ship.

"Are we under arrest, Captain?" asked Von Tannenbaum.

"Just a guard of honor for the Commissioner," said Grimes tiredly.

GRIMES' remark was not intended to be taken seriously—but it wasn't too far from the mark. The soldiers were, actually, members of the Royal Bodyguard and they did, eventually, escort Mrs. Commissioner Dalwood to the Palace. But that was not until after the King himself had been received aboard *Adder* with all due courtesy, or such courtesy as could be mustered by Grimes and his officers after a hasty reading of *Dealings With Foreign Dignitaries. General Instructions.*

Grimes, of course, could have appealed to the Commissioner for advice; she moved in diplomatic circles and he did not.

As long as I'm Captain of this ship I'll stand on my own two feet . . .

Luckily the Port Authorities had given him warning that His Skandian Majesty would be making a personal call on board.

He was a big young man, this King Eric, heavily muscled, with ice-blue eyes, a flowing yellow moustache, long, wavy yellow hair. Over baggy white trousers that were thrust into boots of unpolished leather he wore a short-sleeved shirt of gleaming chain mail. On his head was a horned helmet. He carried a short battle-axe. The officers with him—with the exception of Captain Andersen whose own ship was now down—were similarly uniformed, although the horns of their helmets were shorter, their ceremonial axes smaller. Andersen was in conventional enough space captain's dress rig.

Grimes' little day cabin was uncomfortably crowded. There was the King, with three of his high officers. There was Andersen. There was, of course, the Commissioner and she had brought her faithful robot, John, with her. Only King Eric and Mrs. Dalwood were seated.

John, Grimes admitted, had his uses. He mixed and served drinks like a stage butler. He passed around cigarettes, cigarillos and cigars. And Mrs. Dalwood had *her* uses. Grimes was not used to dealing with royalty, with human royalty, but she was. Her manner, as she spoke to the King, was kind but firm. Without being disrespectful she managed to convey the impression that she ranked with, but slightly above, the great-

grandson of a piratical tramp skipper. At first Grimes feared (hoped) that one of those ceremonial but sharp axes would be brought into play—but, oddly enough, King Eric seemed to be enjoying the situation.

"So you see, Your Majesty," said the Commissioner, "that it is imperative that I resume my journey to Dhartana as soon as possible. I realize that this vessel will be delayed until the necessary repairs have been effected, so I wonder if I could charter one of your ships." She added: "I have the necessary authority."

Eric blew silky fronds of moustache away from his thick lips. "We do not question that, Madam Commissioner. But you must realize that We take no action without due consultation with Our advisors. Furthermore—" he looked like a small boy screwing up his courage before being saucy to the schoolteacher—"We do not feel obliged to go out of Our way to render assistance to your Federation."

"The *Princess Ingaret* incident was rather unfortunate, Your Majesty," admitted Mrs. Dalwood sweetly. "But I never thought that the Skandians were the sort of people to bear grudges."

"We are not, Madam Commissioner. But a monarch, these days, is servant to as well as leader of his people . . ."

Grimes saw the generals, or whatever they were, exchanging ironical glances with Captain Andersen.

"But, Your Majesty, it is to our common benefit that friendly relations between Skandia and the Federation be reestablished."

Friendly relations? She looks as though she wants to take him to bed. And he knows it . . .

"Let me suggest, Madam Commissioner, that you do me—Us—the honor of becoming Our guest? At the Palace you will be able to meet the Council of Earls as soon as it can be convened. I have no doubt We have no doubt that such a conference will be to the lasting benefit of both Our realms."

"Thank you, Your Majesty. We are—" She saw Grimes looking at her sardonically and actually blushed. "I am honored."

"It should not be necessary for you to bring your aides or your own servants," said King Eric.

"I shall bring John and James," she told him. "They are my robot servitors."

Eric, whose face had fallen, looked cheerful again. "Then We shall see that all is ready for you." He turned to one of his officers. "General, please inform the Marshal of the Household that Madam Commissioner Dalwood is to be Our guest."

The general raised his wrist transceiver to his bearded lips,

softly passed on the instructions.

"John," ordered the Commissioner, "tell Miss Rosaleen and James to pack for me. Miss Rosaleen will know what I shall require."

"Yes, Madam," replied the robot, standing there. He was not in telepathic communication with his metal brother—but UHF radio was as good.

"Oh, Your Majesty—"

"Yes, Madam Commissioner?"

"What arrangements are being made for Lieutenant Grimes and his officers—and for my lady's maid? Presumably this ship will be under repair shortly and they will be unable to live aboard."

"Mrs. Dalwood." Grimes did not try very hard to keep his rising resentment from showing. "May I remind you that I am captain of *Adder*? And may I remind you that Regulations insist that there must be a duty officer aboard at all times in foreign ports?"

"And may I remind you, Mr. Grimes, that an Admiral of the Fleet or a civilian officer of the Board of Admiralty with equivalent rank can order the suspension of any or all of the Regulations? Furthermore, as such a civilian officer, I know that nothing aboard your ship, armament, propulsive units or communications equipment, is on the Secret List. You need not fear that our hosts' technicians will learn

anything at all to their advantage." She added, too sweetly; "Of course, you might learn from them."

King Eric laughed gustily. "And that is why We must insist, Lieutenant, that neither you nor your officers are aboard while repairs are in progress. Captain Andersen, please make arrangements for the accommodation of the Terran officers."

"Ay, Your Majesty," replied Andersen smartly. He looked at Grimes and said without words, *I'm sorry, spaceman, but that's the way it has to be.*

GRIMES and his officers were housed in the Base's Bachelor Officers' Quarters and Rosaleen was accommodated in the barracks where the female petty officers lived. They weren't prisoners—quite. They were guests—but strictly supervised guests. They were not allowed near their own ship and that hurt. They were not allowed near any of the ships—in addition to *Princess Helga* and *Adder* three destroyers, a transport and two tugs were in port. Captain Andersen, who seemed to have been given the job of looking after them, was apologetic.

"But I have to remember that you're spacemen, Lieutenant. And I have to remember that you have the reputation of being a somewhat unconventional spaceman,

with considerable initiative." He laughed shortly. "I shudder to think what would happen if you and your boys flew the coop in any of the wagons—yours or ours—that are berthed around the place."

Grimes sipped moodily from his beer glass—he and Andersen were having a drink and chat in the well-appointed wardroom of the B.O.Q. He said,

"There's not much chance of our doing that, sir. You must remember that the Commissioner is my passenger and that I am responsible for her. I could not possibly leave without her."

"Much as you dislike her?" Andersen grinned. "I think she is quite capable of looking after herself."

"I know that she is, Captain. Even so—"

"If you're thinking of rescuing her—"

"I'm not," Grimes told him. He had seen the Palace from the outside, a grim, gray pile that looked as though it had been transported, through Space and Time, from Shakespeare's Elsinore. But there was nothing archaic about its defenses and it was patrolled by well-armed guards who looked at least as tough as the Federation's Marines. He went on almost incuriously; "I suppose that she's being well treated."

"I have heard that His Majesty is most hospitable."

"Mphm. Well, we certainly can't complain, apart from a certain lack of freedom. Mind you, Mr. Beadle is whinging a bit. He finds your local wenches a bit too robust for his taste. He prefers small brunettes to great, strapping blondes. But your people have certainly put on some good parties for us. And Rosaleen was telling me that she's really enjoying herself—the P.O.s' mess serves all the fattening things she loves with every meal."

"Another satisfied customer," said Andersen.

"But I'm not satisfied, Captain. I know damn well that the repairs to my Mannschenn Drive took no more than a day. How long are we being held here?"

"That, Lieutenant, is a matter for my masters and yours. We—and our ships—are no more than pawns on the board." The Captain looked at his watch. "Talking of ships, I have some business aboard *Princess Helga*. You must excuse me." He finished his beer and got to his feet. "Don't forget that after lunch you're all being taken for a sail on the Skag-garak."

"I'll not forget, sir," Grimes informed him.

He was, in fact, looking forward to it. He enjoyed the sailing excursions in stout little wooden ships as much as any Skandian, already had proved himself capable of handling a schooner

under a full press of canvas quite competently, was realizing that seamanship and spacemanship, the skilled balancing of physical forces, have much in common.

He sat down again when Andersen had left the almost deserted wardroom, saw Hollister coming toward him.

The telepath said in a low voice, "I'm afraid you won't be taking that sail, Captain."

Grimes was going to make some cutting remark about psionic snooping, then thought better of it.

"Why not, Mr. Hollister?"

The psionic communications officer grinned wryly. "Yes, I've been snooping, Captain. I admit it. I've maintained contact of a sort with John--"

"The tin telepath?"

"You can call him that. He's very lonely in the Palace, and he's going to be lonelier."

"What the hell are you talking about?"

"The Commissioner has been getting along very well with the King. She has persuaded him to release us, even though the Council of Earls is not altogether in approval. We should get the word this afternoon and be on our way shortly afterward. *Adder* is completely spaceworthy."

"I know. Captain Andersen as good as told me. But why is John so lonely that he's spilling all these beans to you?"

"She wanted to make a farewell gift to His Majesty--and he, it seems, has always wanted a robot valet. Humanoid robots are not manufactured on Skandia, as you know."

"And so John's been sold down the river. My heart fair bleeds for him."

"No, Captain. Not John--James. John's 'brother.' They think of each other as brothers. They feel affection, a very real affection, for each other."

"Incredible."

"Is it, Captain? I've heard about the Mr. Adam affair and how a mere machine was loyal to *you*."

"Then not so incredible."

One of the wall speakers crackled into life. "Will Lieutenant Grimes, captain of the Federation Survey Service Courier *Adder*, please come at once to telephone booth fourteen? Will Lieutenant Grimes, captain of the Federation Survey Service Courier *Adder*, please come at once to telephone booth fourteen?"

"Coming," grumbled Grimes.

He was not surprised to see Andersen's face in the little screen, to hear him say, "Orders from the Palace, Lieutenant. You're to get your show on the road at fifteen hours Local. Mrs. Dalwood will board at fourteen-thirty. You, your officers, and Miss Rosaleen Boyle will board at thirteen-thirty. You will find all in order, all in readiness."

"Thank you, Captain."

Andersen grinned. "Don't thank me. Thank His Majesty—or Commissioner Dalwood."

Grimes returned to the table where he had left Hollister.

He said, "You were right."

"Of course I was right. And now, if I may, I'll give you a warning."

"Go ahead."

"Watch John. Watch him very carefully. He's bitter, vengeful."

"Are you in touch with him now?"

"Yes." The telepath's face had the faraway expression that made it obvious that he was engaged in conversation with a distant entity. Suddenly he smiled. "It's all right. He has assured me that even though he feels that Mrs. Dalwood has betrayed him and his brother he is quite incapable of physically harming any human being. The built-in safeguards are too strong for him to overcome."

"Then that's all right." Grimes knew that he should be worrying nonetheless—but the Commissioner was a big girl and could look after herself. And how could the robot harm her in any way but physically? "You've been snooping in its—his—mind, so you know how he ticks."

"Yes, Captain."

Grimes strode to the reception desk and asked the attractive, blond petty officer to have *Adder's* crew paged.

MRS. DALWOOD looked well. She had softened somehow and seemed to have put on a little weight—although not as much as Rosaleen. She sat at ease in her day room, admiring the beautiful, jewel-encrusted watch that now adorned her left wrist. Grimes sat on the edge of his chair, watching her, waiting for her to speak. To one side stood the robot John, silent, immobile.

"Well, Lieutenant," she said, not too unpleasantly, "you managed to get us upstairs without any major catastrophe. I hope that we shall reach our destination in a reasonably intact condition. We should. As you must have noticed, the work carried out by the Skandian technicians is of excellent quality. Like this watch." She turned her wrist so that Grimes could see it properly. "It seems strange that a robust people such as the Skandians, space Vikings, should be such outstanding watchsmiths—but they are, as you probably know. His Majesty insisted that I accept this keepsake from him."

Grimes said nothing.

The Commissioner continued: "Yes. Things could have been worse. Much worse, as it turned out. His Majesty and I reached an understanding. Together we accomplished more, much more, than the so-called diplomats."

I can imagine it, thought Grimes—and to his surprise ex-

perienced a twinge of sexual jealousy.

Her manner stiffened. "But don't think, Mr. Grimes, that I shall not be putting in a full report on your conduct. It is my duty as a Commissioner to do so. I cannot forget that you gave me your resignation."

Suddenly John spoke. He said tonelessly, "He is thinking of you."

The Commissioner seemed to forget that Grimes was present. Her face softened again. "He is? Tell me —"

"He misses you, Madam. He is thinking, *I really loved her. She reminded me so much of my dear old mother.*"

Grimes laughed. He couldn't help it. Mrs. Dalwood screamed furiously, "Be silent, John. I forbid you to speak, ever, unless spoken to by me."

"Yes, Madam."

"And as for you, Mr. Grimes, you heard nothing."

Grimes looked at her, into the eyes that were full of appeal. He remembered what he had heard of Mrs. Commissioner Dalwood before ever he had the misfortune to meet her. The beautiful Mrs. Dalwood, the proud Mrs. Dalwood, the so-called *femme fatale* of the Admiralty who could, and did, compete with much younger women on equal terms. In a less permissive society she could never have attained her high rank;

in Earth's past she could have become a King's courtesan.

And in Skandia's present?

Grimes said softly, "Of course, King Eric is very young."

"Mr. Grimes, you heard nothing."

He could not resist the appeal in her voice, the very real charm.

I may not be an officer much longer, but I'll still try to be a gentleman.

He said, "I heard nothing."

COMMODORE DAMIEN looked at Grimes over his desk, over the skeletal fingers with which he had made the too-familiar steeple. He said, without regret, "So I shall be losing you, Grimes."

"Yes, sir."

"Frankly, I was surprised."

"Yes, sir."

"But not altogether pained."

Grimes wasn't sure how to take this. He said nothing.

"Tomorrow morning, Grimes, you hand over your command to Lieutenant Beadle. I think that he deserves his promotion."

"Yes, sir."

"But how did you do it, Grimes? Don't tell me that. No. She's not your type, nor you hers."

"You can say that again, sir."

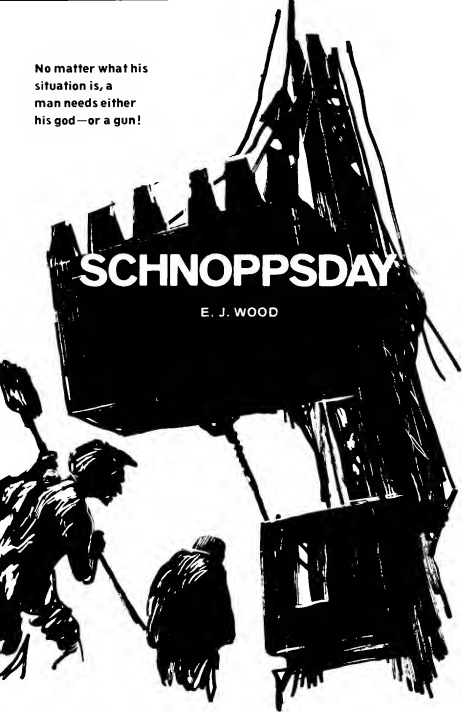
"It can't be what you do. It can't be what you know. It must be *whom* you know—"

Or what you know about whom, thought Lieutenant Commander Grimes a little smugly. ★

No matter what his
situation is, a
man needs either
his god—or a gun!

SCHNOPPSDAY

E. J. WOOD



THE Dragon God stood on a small rise at the end of the field. Its proud blind head with the gleaming teeth stood tall, watching over the welfare of the Valley and all the Smifs in it. The bright iron of the ancient structure glowed under the layer of sacrificial goose grease and butter that the Smifs had rubbed over it.

Smiftu kneeled before it, right knee on the haft of his spade, praying. He prayed the old prayer, the words his mother had taught him.

"O God, whose roar shook the Valley, whose head bit the earth itself with the bite of the hundred hundred spades of a hundred hundred Smifs, deliver my child from fever."

He opened his eyes and looked up and made the cupped hand sign of the Dragon God. And at the same time he checked to all sides for marauders seeking to steal his spade. His child would most likely die. That was bearable; three of his other children had already died. That was life. Children were born usually ten moons after Schnoppsday. They lived a little while and they died. But so long as a man had his own spade, life would go on.

Spadelessness was death.

From the corner of his eye he made out the skulking rag-covered figure of Smifve. Resolutely he laid both his knees upon his spade and went on with his prayers. He did not think they would

help but he had promised his woman that he would offer sacrifice. He wished he could believe in prayer the way the women did, the way old mumbling Smiften used to before he died. It must be comforting. To forget the stoop-shouldered agony of working the field with his spade. To put aside the cold and the hunger in some inner joy, some secret exaltation shared with the Dragon God as He stood brooding endlessly on His Mound above the tater crop.

Smiftu's knees began to ache but he stayed in his place, punishing himself for his godlessness.

The Dragon God had never been good to him. His prayers had never been answered. And today he was going to sacrifice the last fat in the house, the scraped and hoarded renderings of a woodchuck he had killed with his spade. He would rub it on the bare teeth of the Dragon God so they would not go red with anger.

The old spade chiefs said that sacrifice placated the anger of the Dragon God. Smiftu did not believe them. It was a sacrifice that the porcupines and the skunks and the barefooted spadeless Smifs came and claimed, licked from the iron in the night. Within a few days all trace would be gone and the Dragon God would start to turn red in his anger.

The Dragon God. The Dragon God. The words taunted him. The Dragon God took all and gave

nothing. Took their grease and took every Sandday of their lives. Took a whole dawn-to-dusk day of rubbing with the bright sand from the creek until His redness went away and He was ready for the Sandday anointing with the grease that all had gathered.

THE flying body hit Smiftu from behind and threw him face down but he was quick. His left hand grabbed his spade, his right flew forward and down to roll him free so that he came up fighting, left and right hands gripping the center of the man-tall spade haft, ready to cut or parry. But there was no need. Smifive fled in a flutter of rags, old and dull and frightened. Smiftu did not pursue him, did not even shout. To do so would profane the sanctity of the shrine and there was nothing to be gained. Smifive was spadeless. Soon he would die.

Smiftu reached in the front of his jerkin and took out the wood-chuck bladder of grease hanging around his neck on the sinew. Slowly and regretfully he squeezed the grease on to his fingers. He licked it quickly, telling himself he was doing so only to let his hunger double the importance of his sacrifice. He swallowed his saliva and worked away, standing tall, smearing and kneading the grease with his left hand, right hand holding his spade at the point of balance.

Out in the field one or two of the more devout Smifs stopped work and raised their cupped hands in the Dragon God sign. They thought it was a good omen to have a Smif giving sacrifice on the very morning of Schnoppsdays. It was especially good that Smiftu was the one making sacrifice. Smiftu was a rich man. His was the only one-press spade in the Valley. Deep it was, deeper than it was wide, so that one push of a man's heel would turn up enough ground for taters. Most of the other Smifs had two-press spades, worn down to half their height, so a man's work was doubled. Some of the older men had spades worn down to three-press shallowness. You could pick them out at a distance by the way they worked, pumping their spades three times with their heels as they worried the soil over.

Smiftu felt a moment of pride as he stood there, poised tall, his spade in his hand and his own personal sacrifice greasing the jaws of the God. He was a spade chief and a good Smif. Perhaps the God would listen and the spots on his son's face would pass from red to white and turn into little holes and the fever would go away. Sometimes it happened. It had happened to him.

And if it did not, he would ask the Schnopps Lord for help. The Schnopps Lord was coming this day. Looksmif had seen him at the

end of the Valley. He would come and bring all the Smifs together from up and down the Valley. He would make marks on a fine white skin and he would give a horn of schnopps to all the men and women. Then he would take down the sweetbarrel and let all the children reach out a double handful of the running yellow sweetness. And by then the schnopps would make the walls of the Valley swim and tumble and the Smifs would laugh and dance and fight and love their women on the bare ground. And when they awoke the great lord would be gone, leaving rolls of gingham cloth and sometimes, if the woman he had loved had pleased him, he would leave a spade. It would be new and tall and the virgin who was not a virgin would claim it for her own. And the young Smifs would fight and the winner would take the spade and the girl and the yellow-haired baby she would have in the snow time.

Smiftu stood back and made the dragon sign, then turned indifferently and walked away to his own strip to tend his taters and beans. His was a good strip, crumbly red soil that made the taters grow big. This gave him room for the luxury of beans. Too precious to be eaten as they grew, they would be plucked and dried for Smiftu and his woman to chew in snow time. He went to work at once, working left-handed while

he licked the last traces of grease from his right fingers. His spade jumped and danced over the ground, kicking away the tares that sucked the goodness from his soil.

He liked to watch the shiny spade twisting and turning, it soothed him and made him forget the stiffness of his back and the emptiness of his belly. And yet his mind was restless. The other spade chiefs said he was wise. He looked into things and through things. He did not say all the things he thought. Once he had stood up in the council and said the sides of the Dragon God would make many spades. For that they might have stoned him. But they had done nothing. While his children grew sick and died, while his woman had blood in her mouth from coughing, the old ones did nothing.

Why? Why did none of them lift his head from his own strip and look beyond the Valley? Perhaps there was meat there, many woodchucks. Perhaps there was good soil, like his strip. But they said that this was their Valley, another Valley was for other Smifs. They did nothing, nor did they look for answers from the Schnopps Lord. They were afraid and Smiftu felt anger in his heart and he made his resolution. Today he would ask the Schnopps Lord for help.

As he made his plan he heard the first shouts of welcome from the huts at the end of the Valley. He

turned, like all the other Smifs, and saw the Schnopps Lord on his wagon drawn by great beasts pulling slowly along the edge of the tater strips toward the meeting place in front of the Dragon God.

With all the other Smifs from the fields he waved his spade and shouted and ran in clumsy hobbling leaps over the growing tater plants toward the Schnopps Lord.

CENSUS-MAN Second Class Serov flourished his whip at the Smiths and clucked his team into a trot. All who could walk or drag themselves were drawn into the wagon's wake like the screaming tail of a horsedrawn comet. He did not need to go twice around the settlement, as was suggested in the Census-man's manual. He needed only to ring his bell and pull his wagon up to the low mound where the antique power shovel stood. Serov grinned when he saw it. All traces of paint were long since gone but the metal gleamed like a knife blade under the layer of evil-smelling grease the Smiths had rubbed on it. Really, these valley morons were too much, spending one day in ten scraping the shovel down with river sand. Still, it was not as amusing here as in Kellyvalley, fifty kilometers back. Those dizzy bastards worshiped a Mack Truck.

He stopped the wagon and stood up tall on it while he looped

the reins around the brake lever. The instructors at Census School had always stressed that. *Make the most of your height. Stay high and aloof and you'll never have trouble.* Serov did not anticipate trouble. He eased his Luger in the low-slung holster he had made for himself and swelled his chest. It was easy to imagine himself a U.S. Marshal at times like this. Serov knew all about U.S. Marshals. His doctoral thesis had been on the subject of camp culture of the mid-twentieth century. He had seen all the western movies and TV shows to be found in the Museum of Primitive Arts. Because he was young and impressionable, despite his education he liked to model himself on one Matt Dillon. He would have liked a Peacemaker .45 on his hip instead of the issue Luger, but this was impossible. Guns were illegal except for the admittedly old-fashioned weapons issued to front line men like himself.

He waited silently, not moving until the last whimpering of anticipation had died away, while the Smiths gathered in front of him.

"Dobri dyen," he said at last and waited while the formless roar of reply broke and subsided.

"Where is the chief Smif?" he asked and the crowd parted to let the feeble old man come through. He was toothless and almost blind and his hair and beard were matted. He was dressed in a pair of

shorts and a leather coat-liner that looked to Serov like British army issue. That might be so, he decided. Smith was an English name and the Smiths of this valley might have had ancestors in that Imperial army.

He let the old man stand for a moment, then said, "Happy Schnoppsdag, Smif."

The old man bobbed his head and cackled. "Happy Schnoppsdag, Lord".

"Are all the Smifs here?" Serov kept his voice low and firm, enough like Matt Dillon for him to have blushed to have his City friends hear him.

"Smifteen is sick. He will die today and Smifive's woman is in labor—she will be here soon," the old man said.

"Good. There will be schnopps this day for every Smif."

All the male Smiths were lining up in spade seniority. First was Smiftu, spade in hand, adenoidal mouth gaping slightly. He was tall for a savage, over five feet and he was dressed in woodchuck pelts, which marked him out as a resourceful man.

Such men are dangerous, Serov thought. He debated whether to take away Smiftu's spade, dooming him to starvation once the present potato harvest was gathered. However, some echoed kindness from his television folk tales stopped him. He would allow the savage to keep his weapon.

After all, he was doomed anyway. Judging by the muster this morning the population had dropped another twenty percent through the winter. The Experiment was succeeding and anyway he had work to do. The bribe that brought the Smifs out of hiding must be paid and, as always, the census had to be taken.

He picked up the pink plastic cup from the wagon bed and turned to the wooden alcohol keg on its trestle behind him. He opened the spigot and let four ounces of the clear neat spirit run into the cup. The smell of it was almost enough to make him gag. Raw synthetic spirit, by-product of a refinery. Originally, a hundred and twenty years ago, when the experiment began, the spirit had been rum, good rum. Over the years, however, since the Experiment was working as well in the Carribean as it was on the mainland, rum was no longer produced. In its stead came the synthetics, potent blinding chemicals with the power to wash away a year's worth of hunger and sickness in two gulps. He presumed that one of the previous census-men in this valley had been German or Jewish and had used the foreign appellation for the spirit that was known as gin or vodka or even viski in other valleys. Personally he liked the word schnopps, it was so perfectly non-specific.

HE TURNED and faced the crowd. The brown, hungry face of Smiftu looked up at him from the side of the wagon. Serov held the plastic cup for a few seconds longer, relishing the desire in the faces about him. God! He was king. Standing there with a few ounces of oblivion in his hands. No wonder so many census-men went AWOL every year. They couldn't give up the feeling of power. Nobody ever missed them, of course. It was presumed that they had died. Within the air-conditioned silence of the City no one could imagine a census-man going native. They didn't know the power a few ounces of spirit and a few spades bestowed upon a man out in the valleys and they were too occupied with the satisfactions of the New Leisure to try to find out.

After all, one could not be teleported into the Valleys, one had to move physically. In fact, now that the last of the old helicopters were rusting from lack of use, a horse and wagon was the only way to get anywhere outside the Cities and none of the manicured City Dwellers would descend to such a barbarous method of transportation. That was only for the few restless souls like himself who had volunteered for census work.

He handed down the plastic cup, ceremonially known as the "Horn" among the Smifs. But Smiftu did not take it. Instead his

pleading, broken-toothed mouth opened in clumsy speech.

"Lord. Many Smifs say you come from a far land, from City."

"True," Serov said impatiently.

"Lord, it is said that many schnoppsy things happen in City. That men do not grow old, that children do not die of spotted fever."

"Speak your mind, Smiftu," Serov said sternly and a worried whisper ran through the crowd. What was Smiftu doing? Why did he insult the Lord Schnopps with talk?

Smiftu turned and glanced back, silencing them all with the reflected power of his one-press spade. "Lord, my son is sick with spotted fever. I have prayed to Dragon God but the fever remains. Does the Lord have patience to cast out the fever?"

This son of a bitch was thinking. Serov frowned. That was bad. The last thing he wanted on this circuit was a noble savage. That had been the selling point for the Experiment when it began, of course, to shift the indigent unemployed townspeople out where they could work for their own living. And they'd bought it. They had come out into a well advertised, carefully euphemized wilderness to eat bread by the sweat of their own brows. It had all been so cynically done: why, they had even been assigned to their areas alphabetically. And once they had been isolat-

ed there it had been easy to exploit them or to starve them out, as the economy demanded, to withdraw fuel for their machines, drugs, seeds, tools, and watch them revert into helpless savages. There had been uprisings of course, repeated time after time until the original settlers had died and only their children were left, dealing with an inadequate environment, without energy to move out of their Valleys. Only once in a while did an aberration like Smiftu break through, some savage with a high enough IQ to think for himself. Such had to be dealt with summarily.

Serov stood taller, looking out over Smiftu's head. "This Smif angers me. There will be no schnopps for this Smif. There will be no schnopps for any Smif who listens to this idle talk. The Dragon God protects all. Let no Smif doubt the Dragon God's power."

The Smifs mumbled and shuffled. After they had drunk they would stone Smiftu. They would seize the opportunity to kill him and strip him of his spade and of his garden. Sacrificially Serov poured the schnopps upon the ground. Then he filled the cup again and passed it to the next man in line. The man crooked his tall spade in his elbow and drained the schnopps in two bursting gulps. And then the next man was pushing him aside, raising his own arms in his turn. Serov counted

mentally as he doled out the schnopps. The adult males here were down by 25%, counting Smif-fifteen who was dying and Smiftu who was doomed once the hangovers had worn off and reality faced the Smifs again tomorrow. A decrease since last year. The Valley had long since ceased to be productive, had become troublesome.

HE FINISHED with the men and poured spirit for the women, flappy-breasted dirty witches, for whom he had nothing but contempt. Conceived on noon of some previous Schnoppsday, resented even before their birth, the savage women had nothing noble or desirable about them. When one contrasted them with the plastic-bosomed adornments of any City dweller's harem . . . However there was one little urchin who attracted him. She would be about thirteen, Serov judged, with breasts beginning to swell. She would do for today, he decided. When she came forward for her schnopps, her first schnopps, he judged, he touched her upon the shoulder and she crouched beside him warily, awaiting his pleasure.

He fed schnopps to each of the women and then broached the molasses barrel, the sweetbarrel as it was known in Valley pidgin.

He called to those of the women who were not yet hopelessly drunk and they brought him the

smallest and the sickest of the children first. He stood back as the tots jammed filthy fingers into the syrup and rubbed the sweetness into their whole faces, as if their very pores had taste-buds. Good kids. Go ahead, infect the syrup and pass it on. Pass it on so that the next census shows less and the census after shows less again. Pass on the barrel with a cargo of mumps and measles and diphtheria and smallpox and all the other goodies. Pass it along and help nature take her course.

He laughed, watching the toddlers taking their turns until they were lifted away screaming by their reeling mothers. No wonder City people had ceased to consider the savages any threat. There was no spine here, no guts. Just a blind groping for more, like kittens whose eyes had never opened.

In a final generous, vicious gesture he lifted the almost empty sweet barrel and pitched it to the ground, where the children fought and snarled over it like dogs. Tooth and nail they fought for the few calories that might so easily have been theirs if only their fathers bothered to keep a few bees. If only—if only! Starting from here in this Valley these stupid bastards could still recover.

He looked around him at the drunken Smifs who were fighting, dancing, copulating, or simply lying on the ground like dead sheep. Then he reached into his

haversack and took out a cleaning swab. With it he wiped the girl he had chosen, contemptuously ripping her few rags from her. The cleanser made her shudder but she did not resist him. Within a minute she was completely clean, slightly perfumed and ready for him. He dropped the soiled swab and took out a concentrated food bar from his kit. While she wolfed it down he took a pull at his hip flask, letting the centuries-old cognac give him the added fire he needed to soil himself with the little savage. Then he led her to the mound beside the old power shovel, the only grassy plot in the whole valley and laid her down.

ALL the while Smiftu watched from his hiding place behind the huts. Fear was big inside him, making his breath small and his heart very loud. He had seen Smifs kill an unwanted Smif, had helped to do it, so he could expect no mercy. And yet something bigger than fear kept him where he was, watching. He swallowed and he watched. The God made love to his women exactly as a Smif would have done. It was the first Schnoppsday that Smiftu had ever been sober and he observed with interest what was happening. Perhaps the Lord was like a Smif in other ways, too. Perhaps the Lord would die if a Smif hit him in the killing place under the ear with the keen edge of his spade.

He watched while the children squabbled and licked the sweet-barrel dry. And while the Lord Schnopps finished abusing the girl and stood up, kicking her aside. And then his eye filled with the horror of it as the Lord turned to the Dragon God, who stood high and proud on his Mound, and opened the front of his garment again and soiled the side of the Dragon God.

It was too much for even a heretic like Smiftu to countenance. Silently he raced over the packed earth, vaulting over the sleepy children, his spade already poised in his hand. The Lord heard him and turned but his hands were too busy to reach for the loudspade he wore by his side and before he could reach it, Smiftu had sliced his throat with the edge of his spade. The Lord died as men die. He struggled and bled upon the ground and he died, choking and gurgling. No Smif was awake to see him die. Only Smiftu. And as the Lord died so did Smiftu's fears. He reached down and took

the loudspade from the dead Lord's hand. And his eyes turned to the Lord's wagon and the great beasts who pulled it.

Slowly Smiftu went to the wagon and looked into it. He found many spades in it, two hands' fingers of spades. And he found gingham cloth and something that felt like hide but was not hide and other wonders that he did not understand. And he found the schnopps barrel to be empty. And he thought a thought - perhaps the barrel could hold water as well as schnopps. And perhaps the same beasts who drew the wagon with schnopps could draw the wagon with water. And many walks to the well and from the well would be saved. A man could sit upon the wagon and not work. And a man could think. And Smiftu's puzzled mind became for an instant clearer. He would think perhaps of taking one side from the Dragon God and making a giant spade that the beasts could pull. Yes. Smiftu would think of many, many things. That much he knew. ★

WORLDS OF TOMORROW, Winter 1970-71

Laumer • Macfarlane • Jakes • Koontz • Barrett, Jr.

NOW ON YOUR NEWSSTAND

LOTA 22A

He was the humblest of men. The last thing he wanted was the power to destroy all humanity!

DAVID J. ROGOFF

A CLEAR cold wind ripped through the early fall evening. The wind always blew out of the mountains at that time of the year in Denver. Robert Brent Holmes was used to it. He zipped his wind-breaker to the neck as he got into his car and drove to the Rocky Mountain Arsenal, where he was officially listed as a Custodial Engineer—a government euphemism for janitor.

At thirty-seven, married and with three daughters, Holmes was an average sort of man—perhaps a little heavier than he needed to be, perhaps not as bright as he would have wanted—and perhaps a little disappointed that he was a janitor and nothing more. But he had liked working at the arsenal because he had felt it was a job with a great deal of security and more fringe benefits than most janitorial jobs offered and because the pay, although low, was better than the average janitor received.

He had been working at the arsenal for three years, and had expected to continue working there until something better came along. His wife had objected to his working the night shift—but in a year or two, if all had gone well, he would probably have been getting his choice of shifts.

But the arsenal had just completed its task of detoxifying various nerve gases which had been stored there. The job had taken

longer than had been expected but it was finished at last. So the talk was that the arsenal would be shut down and the thirty-five hundred employees either transferred or laid off. Robert Brent Holmes' job was one that would be done away with outright and he was now nervously awaiting a dismissal order.

"Nobody ever cares what happens to people like us," his wife had said before he left for his shift. "We can all starve as far as they're concerned."

"Well, they're talking about keeping the arsenal open to destroy bacteriological weapons," Holmes told her. "We'll just have to hope that's what they do."

There were several custodial engineers at the arsenal and Holmes was hardly noticed as he showed his I. D. card and drove through the gate. As a matter of fact, he was hardly noticed anywhere at any time.

Before he had learned of the threatened closing of the facility Holmes had never paid much attention to what went on there. But with the imminent possibility of losing his job, he became interested in everything about it. He began to read every newspaper story, every report in the magazines and he listened to every radio news story about the Rocky Mountain Arsenal.

A battle was raging between the politicians of Denver and the Pentagon, which was in charge of the

facility. The loss of thirty-five hundred jobs was no laughing matter to Denver and the local leaders fought hard to retain the large employer.

Following the signing of the International Peace Pact in early 1973, all the nations of the world were in the process of destroying all but the internally necessary defensive weapons in their arsenals. Robert Holmes laughed to think that the peace which had eluded the world from the beginning of mankind was now approaching reality—and was likely to deprive him of his livelihood. It was a bitter laugh at best.

Somehow the local politicians got through to the Pentagon. Coincidentally, the military leaders of the nation were at a loss to find a place, fully equipped, without any other function, at which the stock of a bacteriological warfare strain could be destroyed. Lot 22A, a particularly virulent strain, was at the time being stored where it had been grown, at the Maryland Chemical and Biological Research and Development Center.

LOT 22A was a problem. It produced a blood disease in animals that was invariably fatal. Scientists could find no antidote for the disease. The fifteen hundred different cultures of Lot 22A were extremely unstable and expensive to store, requiring constant refrigeration in order to keep the strain

sporulated and non-reproductive. Having failed to find an antidote, the scientists got to work on a means of prophylaxis against the strain. Their quest in this direction went unrewarded. Lot 22A therefore was useless as a weapon, since no protection for friendly populations was available. The military had declared the whole lot "obsolete," and recommended that it be destroyed immediately.

When the International Peace Pact had been ratified Lot 22A became an example to prove that the United States was indeed destroying its offensive weapons. At about this time, the Rocky Mountain Arsenal finished its detoxification function, and the debate about what to do with the facility had reached the executive mansion in Washington.

Senator Longdon of Vermont made a strongly worded speech against all germ warfare weapons, and particularly against the storage of such weapons. The President, cognizant of the political bombshell which would be made of continued storage of biological weapons—especially Lot 22A—saw an opportunity to kill two birds with one stone. Calling the congressional delegation from Colorado into the Oval Room of the White House, he held a press conference at which he told the world the United States would begin destroying stocks of biological weapons immediately.

and that the Rocky Mountain Arsenal would be converted for that use, at minimum cost, enabling the Denver area to maintain the thirty-five hundred jobs at the arsenal.

A few voices were raised in protest, some claiming that the rest of the world powers could not be trusted, and that the U. S. would be left without a powerful enough deterrent. Others claimed it was unsafe to destroy these weapons near so large a population area.

Robert Brent Holmes was happy when the new role of the arsenal was announced to his shift that early fall night. Knowing that he would have his job for some time to come he went about his work, feeling free once more to plan his personal life during the winter months ahead.

In the morning, when he reached home, he played with his old shepherd dog with greater gusto than usual, hugged and kissed each of his girls and happily told his wife about the arsenal's new lease on life.

"This Senator Longdon from Vermont," his wife said, referring to a newspaper story, "doesn't think it's such a good idea to bring all those germs here."

"What does he know?" Holmes answered. "He doesn't have to worry about his job. I think it's a great idea."

The shipments of Lot 22A began to arrive at the arsenal the

following week. Holmes smiled as he saw the bright red, refrigerated, aluminum packing cases. With his job assured, he thought of taking the children sledding in the mountains when the snows came, of short drives in the foothills in the spring, new clothes for his wife and all the other things a man can enjoy when he is on regular wages.

Holmes, one night, was at his duties in the corridor in front of the hermetically sealed laboratory. He had swept the floor and had begun to mop it when the setup crew started to bring in Lot 22A and unload the cases in the laboratory. Holmes cursed under his breath as the men tracked up his freshly mopped floor, not even noticing him or the clean tile. He mumbled as the laboratory was depressurized with a hiss, the seal was broken and the men went inside, guided by the chief microbiologist. Handtruck tracks and footprints continued to slop up the clean floor and finally Holmes decided to wait until the men were finished before he continued to mop the corridor.

HE WATCHED as the individual vials of culture were carefully removed from refrigerated packing cases, and each vial was placed in the refrigeration unit, in special racks. The unit was open on one side to expose the vials to ultraviolet radiation. The bacteria would be irradiated for twenty-

four hours before being dumped into a bariumoxide bath for final destruction.

Scientists who had worked with Lot 22A in Maryland had noted a peculiar property of the strain. Although exposure to ultra-violet for twenty-four hours immobilized most of the bacteria and rendered them permanently incapable of reproduction, a tenth of a percent of each culture was likely to mutate as a result of such exposure. The mutant strain, rather than being sterilized or otherwise weakened by irradiation, became active, more virulent than ever and, the bacteriologists surmised, if not destroyed by barium oxidation immediately, capable of reproducing at seven to ten times the normal rate. Further, this mutant produced the same disease as the rest of Lot 22A, but the disease occurred so gradually in animal life that death took three to four weeks under most conditions, rather than the one to two weeks expected with the normal strain.

For a period of ninety seconds after birth the mutant was particularly dangerous. Exposed to warmth and ultraviolet under proper conditions, the mutant multiplied wildly—provided it met a saline and yet somewhat alkaline environment and fibrous, hairlike material upon which to string out during this period. Under these conditions the mutant strain was

virtually indestructable. After the ninety-second gestation period the new strain reproduced geometrically, becoming air borne and eventually capable of killing all animal life on the planet. Since these conditions were not likely to be met in the laboratory, containment and destruction were considered to be well within safe limits.

Holmes continued to watch the setup men half-heartedly, wishing they would finish and get out of the corridor so he could complete his work there and move on. He was dropping behind schedule and would not have the time for a full lunch hour.

When the men finally finished and left they walked past Holmes as though he weren't there. He was used to being an invisible man. All the janitors were nonexistent to the higher echelons. However, Holmes didn't care. As long as he got his full pay on time, his regular fringe benefits and was left in peace to do this work, he didn't care if all the people in the arsenal made believe he wasn't there.

Let them be snobs—I don't need them.

With the men gone and the laboratory once more pressurized and sealed, Holmes finished mopping the corridor, stopping once or twice for a breather and to look at the vials standing in their racks. He shook his head and made extra sure the floor near the three high-

impact, plexi-styrene inset operation booths was clean. He glanced at the rubber gloves fastened under the viewplates in the booths inside the laboratory, waiting for the scientists to come and bring them to life in the slow, animated movements necessary safely to move the vials.

After he had finished mopping the corridor, he looked at his watch. It was late—well past the start of his normal lunch hour and too late to eat in the cafeteria. He took his lunch bucket from the cleanup cart, backed against the wall opposite the inset booths, and slid his backside to the floor. He opened the lunch bucket and took out the first of two sandwiches, smiling as he unwrapped it, and realized that it was tuna fish—his favorite. He began to eat with gusto, pausing to hum bawdy ballads between bites.

OUT of the corner of his eye, Holmes saw a bright flash of light. He looked up, but nothing was out of order and he went back to his sandwich. Another flash. This time he stood up and walked over to an inset booth. Light was flashing intermittently from a portion of the wall that could not be seen from outside the lab. Holmes gulped down the last of his sandwich and went into the inset booth. He still couldn't see the source of the flashes of light but he was almost certain something

was wrong. He stuck his hands into the rubber gloves fastened to the booth and pulled his body closer to the viewplate. He could barely see the sparks jumping from a circuit-breaker in the wall, not two feet away from him, but within the lab. Then there was another flash, brighter than before, and Holmes thought he heard a crackling sound. He felt extreme heat on his right hand, through the glove. He glanced up at the vials of cultures. They were vibrating a little, the one closest to his right hand was tilted precariously. Holmes reached in and straightened it in its rack. Then he withdrew from the booth and walked to the fire alarm box. As he raised his hand to break the glass and sound the alarm, he noticed a fleck of his sandwich on his index finger, and unconsciously licked it off. Then he struck the little brass hammer against the glass, pulled the lever and sounded the fire alarm. He went back to his lunch bucket and packed everything to get it out of the way.

The fire crew arrived instantly. They depressurized the lab, broke the seal and went in to put out the fire. The microbiologist was on the scene a moment later to inspect the damage.

Holmes figured he'd have to mop the floor of the corridor again. He left, going to the next unit, intending to come back to the scene of the fire and clean up

after the men finally were gone.

"Doesn't seem to be any damage to the Lot," the microbiologist said into a walkie-talkie. "The heat of the fire could have dried and cracked the rubber gloves in booth A—better replace the gloves immediately. The refrigeration unit was out for a second or so until the emergency power switched on. The men are completing circuit box rewiring now. All vials seem undamaged—still cold." He didn't notice the hairline crack at the top of the vial Holmes had straightened. "Some of them are standing at peculiar angles. Must have been vibration from a slight explosion. No visible damage, though."

ROBERT HOLMES finished the corridor in front of Lot 22A just before his shift was over. He zipped up against the chill air as he left the arsenal. Orange-gray slants of light were beginning to show in the black, predawn sky as he headed home. He was looking forward to some peace and quiet. He parked the car in front of his gate, walked into the front yard and was immediately pounced upon by his old dog. He petted the animal. He was as happy to see the dog as it was to see him. The shepherd licked his master's hands and some of the already activated mutant bacteria began a new colony in the animal's mouth. The strain was al-

ready beginning to multiply geometrically, having been brought to full and active life by the saline and alkaline saliva of Holmes's mouth.

A new day was dawning. Robert Holmes walked into his house as he always did, perhaps a little happier than usual. He kissed his wife with genuine warmth instead of giving her the habitual peck on the cheek. She smiled at him, took his windbreaker and motioned him to breakfast. The children were just getting to the table; their hot cereal was steaming—waiting for them. Holmes kissed each of his daughters in descending order from the eldest.

An old dog, almost blind, the shepherd had few pleasures in life. The greatest was to greet his master when he came home from work. Next came the joy of rolling in the yard with the two youngest girls. But, for pure fun, there was nothing to surpass his games with the large black and white tomcat from next door. At least twice each day—in the early morning, just before the cat was allowed into the house, and again in the evening when he went out—the cat jumped the fence to play with the shepherd. This day was no exception. The dog was happy to see the blurred image of the cat coming toward him.

They wrestled, as animals do, just playing, of course, the dog taking the cat's head into his

mouth, careful not to hurt his friend. Then the cat broke away and the dog chased him, faking menacing growls all the way. When the cat was caught, it was his turn to chase, and the shepherd ran, the cat hissing close on his tail. When the cat's master came out to go to work the game was broken off immediately. The cat liked to rub against his master's legs, waiting to be picked up and stroked. The old tom heard a door close and jumped back into his own yard, tail erect, running to his master's legs.

Ricardo Montoya lifted his cat and allowed the animal to nip his hand gently. Then he got into his car for the short drive to Stapleton International Airport, where he prepared food for inflight meals. He had a busy day ahead. The first flight on his shift was headed for Los Angeles with connections to the Orient. The second flight went to New York with connections for Europe. Montoya was proud of his part in the vast transportation system that crossed through Denver.

THE mutant strain of Lot 22A was multiplying madly by the time Montoya's cat infected him. The bacteria no longer needed any saliva to speed reproduction. If bacteria had a paradise, these mutants were enjoying theirs. They had increased to a population many million times their original number. They were air-borne

and spreading and conditions were favorable for even more rapid reproduction and infection.

When Robert Holmes's dog died, eighteen days later, the family was sad but not surprised. The dog was old, winter was coming and the animal had seemed very tired and weak for a number of days before. They didn't take the dog to a veterinarian because they couldn't afford that kind of luxury. Besides, they knew the dog's days were numbered.

The entire Holmes family was feeling under the weather by this time. Holmes himself felt tired and without energy all the time. His whole body ached, not badly, but enough to be uncomfortable. They all had diarrhea. Of course, it was the beginning of the flu season and they went through something like this every year. None of them thought much about it.

Ricardo Montoya and his family seemed to have the flu bug also. Something was going around. Others in the city were complaining of aches and pains, fatigue and various other symptoms. During flu season such discomforts were common and nobody took alarm.

At the arsenal work proceeded on schedule. Lot 22A was being destroyed. The scientists were already looking forward to the next lot of biological weaponry to be disposed of at the arsenal. Hardly anyone at the place re-

membered the small electrical fire of almost three weeks ago. Besides, they had their own problems. Everyone in the Denver area seemed to have, to greater or lesser degree, some form of influenza. It was discouraging, many of the scientists thought.

Here we are able to create and destroy complicated bacteriologi-

cal forms, and we still can't do away with influenza or the common cold.

On the morning of the twenty-third day after the fire Robert Holmes felt terrible. He took some aspirin and went to sleep. The children were already in bed with the flu and Mrs. Holmes was barely able to get

★★★GALAXY STARS★★★

"My very first novel, all about a still-to-come space race," says Ben Bova, "was rejected back in 1950. The publisher was afraid Senator Joseph McCarthy would take exception to an American suggesting the Russians might be ahead of us in anything. It was a more innocent world then."

Seven years later, when Sputnik and the space race were launched, Ben was a technical editor on Project Vanguard, which was supposed to produce man's first artificial satellite. At the time, Ben admits, there were strong indications that the Russians would do it. "But," he says, "we were nonetheless shocked when Sputnik actually went up." Every year the AIAA gives the Robert Goddard Award to the man who has done the most for American astronautics. "At some point," Ben muses, "Nikita Khrushchev, the man who really got us to the moon, should have been the recipient."

Ben discovered sf with the first issue of **Superman** comics. He was intrigued by the picture of the hero leaving the exploding planet Krypton. From there, Ben's reading in the field followed a more or less traditional path from Burroughs to Heinlein to Bradbury... After writing and submitting a few unsuccessful stories, Ben sold his first novel, **The Star Conquerors**, ten years ago. The book was the first of many successful science-fiction juveniles, and he has written as many science-fiction and science-fact books for the general reader.

Ben, his wife Rosa, and their two children, Michael and Regina, live in a suburb of Boston, where he is the Manager of Marketing for Avco Everett Research Laboratories. Part of his job is to find customers who are willing to make sf stories come true, like building high-powered lasers and developing artificial hearts and finding new sources of energy....

around the house. That evening Holmes felt so weak that he asked his wife to call the arsenal and tell them he would not be in—that he was too ill to work. It was the first time he had stayed home sick since he had started working at Rocky Mountain Arsenal.

Mrs. Holmes couldn't get a line into the arsenal. The telephones were busy and remained busy all night. By the time Mrs. Holmes went to sleep, her husband was in a coma. She didn't notice it, though. She was so tired, she fell off to sleep as soon as she hit the bed.

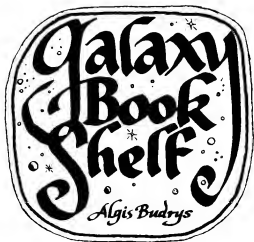
The children died quietly during the night. Robert Brent Holmes passed away around midnight. Mrs. Holmes was the last to go, sometime between two and three in the morning. There was no one to find the bodies. Even if there had been someone, there was nothing anybody could have done. Lot 22A (mutant) was already in full control of the world's destiny.

The first call came to the bacteriologists at the arsenal about midday of the twenty-third day after the electrical fire. A skeleton staff was manning the massive facility—absenteeism being very high. The call was from a Denver pathologist who had done an autopsy on an old lady. The doctor claimed there was something peculiar about the blood slides from the old woman. He made an appointment with the bacteriologist

to look at the slides the next day. The appointment was never kept. Both the pathologist and the bacteriologist were found dead by morning.

The spread of the disease was unbelievably rapid. Deaths were so common and frequent in many countries that corpses were stacked up in the streets. Governments were unable to function. Industry ground to a halt. The industrialized nations were hit the hardest and the soonest. The mutant bacterial strain distributed itself through the air currents. Soon the animal food sources on the planet disappeared. By then it didn't matter. There were not many people or other animals around to eat the food animals.

A CLEAR, cold, wet wind brought the first snow of the season to the Rocky Mountains and to Denver. The wind whipped the snow into small drifts in the city. Whirlwinds of snow spun through the quiet streets. The automatic, thermostatically controlled heating units in the buildings increased their output. The only sounds inside buildings were the hums and clicks of automatic machinery. Outside, only the wind made noise. The snow fell on the city, clean and white. It settled on the ground waiting for footsteps to crush it into slush. ★



IT'S a rainy day where I'm writing this, three months before you see it. The kind of day on which a writer does the first four pages of a manuscript based on nothing more than a pervasive mood and a chance opening sentence. If he's lucky, he'll eventually figure out where the story's going and finish it. More than likely, he'll throw those four pages away, with his subconscious keeping a word or two for use when it's relevant. If he does finish it, out of a sense of economy, he'll probably have to force the issue; what began as a moody outburst will be extruded into a "story" through one of the standard plot templates. He'll collect his few cents a word with an inner feeling of ordinariness. The next time the weather and he are like

this, he'll say to himself: "Another one of those useless rainy days."

Writers write lots of things that aren't "stories." The concept of "story" is essentially an invention of the audience. By the nature of things, the audience is prevented from reacting to anything but the structure of a given column of arranged alphabetical symbols.

It can't know what an arrangement of words meant to the writer. It can't finally extract a meaning until it receives a positive indication of realized purpose. That is, a plot-turn. But a writer speaks first to himself. He selects words and reactions in response to his intimate internal structure. A writer can tell himself a "story" with one sentence with a word,

or sometimes less. Only afterward does he face the chore of expressing something like that same reaction to a group of strangers.

If writers didn't have to publish, they wouldn't have many writing problems. Writers write to themselves automatically; little internal greeting cards and get-well messages; bulletins on the state of the environment; dunning letters; checks drawn on the bank of psychic satisfaction; diplomas; notices of termination of service.

A writer is his own foster parent. He took over the assignment of raising himself on some early day when he noticed irrevocably that the world didn't have things quite right; that you might love others but you couldn't trust them to do a good job.

Writers are happiest when they don't have to publish. Translating for strangers wastes time, obscures important points, and interferes with what should be an uninterrupted lifelong flow of communication. The happiest, most grown-up writers are the ones who find some non-conflicting means of earning a living. Of course, they don't get any stories out.

A commercial writer—a science fiction writer, say—has a choice. He can write on his dilemma. Or he has the choice of not giving a damn; of divorcing what he publishes from what he writes to himself.

The mind being infinitely ingenious in protecting its immediate comfort at all future costs, the divorced writer can maintain his position in the eyes of the audience by ceasing to take responsibility for communicating to his ward—by leaving his personality in perpetual adolescence in exchange for his body's living. He is now free to devote himself as a "writer" solely to extracting reactions from audiences. Of course, he is no longer in a position to judge the validity of what he "writes."

He develops an apparently egocentric exterior personality, forcing himself on the individuals around him with the word-exercises of the quipster, party raconteur, amusing drunk, or of the abrasive gadfly, compulsive lecturer, agitator, Don Juan, or ugly drunk. This is because words and actions have become mere appurtenances to the only message he has left, sent outward in the only direction he has: "How'm I doing?"

Of course, if you don't know the answer to that one, Buddy, at every given moment, you're in trouble that won't be handled this side of the grave. But you are a "writer." No one around you can doubt it.

The mind being infinitely ingenious, there's another way, which is to create a strict separation between what you are and

what you do. The internal writing goes on; the public "writing" is something Mr. Hyde does. Essentially, this is an attitude of total contempt for the audience.

Either way—I doubt if there are significant other choices for him—the divorced writer is no longer in a position to judge the validity of what he "writes."

IT'S the nature of commercial writing—science fiction, say—to force writers toward divorce from themselves. The pressure is not to waste a word or an idea. You can see it in the way so many writers forward every feeble notion as an "idea" or expound at length on some incidental detail because it represents the only flash of true invention in an otherwise routine construction. The happy ones in this brood are those too young or too oblivious to perceive the nature of the process.

(Writers come in all grades of intelligence; communication is not a measure of wit. One of the most "perceptive" writers in this business is a silly, stupid man by any measure of his ability to reason consistently or to function in this world. So are any number of nonwriter people, of course. That's my point in this instance: writers are human. They are vulnerable. At least, I hope so, because that's my excuse, too.)

Under pressure—economic pressure, ego pressure, or whatever

comes in this regard—a human writer cannot help but begin to exhibit the behavior of a trapped rat. If he is to maintain his editorial contacts, to keep his name before the audience, not break the flow of checks, to progress unfalteringly toward the day of boxed sets, mass reissues and the lecture circuit, there must be times when he must perform out of tune with what goes on inside him. Repeated often enough, the offense to his vital parts is great enough so that the troublesome vital must be isolated; he ignores it and waits for gangrene, or he eats it off, and experiences immediate relief.

The audience demand is for consistent excellence, of course. And why not? The implied contract states that the audience will get delivery of what it pays for, with the asking price for promised excellence set by the publisher.

For the audience, the publisher is indistinguishable from the writer. It doesn't buy a manuscript; it buys a story, printed in a package with illustrations and the rub-off from the total gestalt of features, associated stories, typography, the memory of past issues and the featured promise of future publications. Even when the audience sits at the evening fire and listens to the bard, it buys his gestures, his voice, his manner of dress and the camel on which he rides. Day after day, vil-

lage after village, fire after fire.

And why should anyone care about his need to resolve his problems with his unsuitable wife, or his reckless child, or the frequent pain in his left arm? Yet he would love to tell you about them—if it were possible to do so without first conferring them upon some hero with different clothes and a better camel...that is, upon someone for whom these attributes cannot be ultimately true, for he differs from the man who speaks of them?

There are many dangerous professions. And many of them call not only for a disregard to personal safety but for a simultaneous exercise of complex and educated skill. The commercial arts, however, are uniformly dangerous even to the man sitting still in his chair. They can leave the body able to move and speak while macerating the personality; there is no topectomy as

successful as the one the surgeon directs for himself. In most cases, coldly considered, there is no appreciable loss to the world. But the remorseless process spares neither small nor great. There's such a little time in which the commercial artist functions in joy. Yet next month's issue comes out forever.

We speak of it casually—the writer's block, the eventual burn-out, the descent into (comparatively) affluent mediocrity, the Styrofoam packing of established reputation and rigid, acceptable public *persona*. We've seen it happen to them all; it's an accepted phenomenon. Nine-tenths of the anthologies that cross my desk are crypts jammed full of funerary urns, twined over with encomiums. Half the novels are headstones.

It's a rainy day. Next month I'll review some books. This month, it wouldn't be polite. ★

WALK through the woods on any dark night between now and the next appearance of GALAXY at your favorite newsstand—and the silence you will hear is made up of the bated breaths of authors whose latest birthings have not yet been subjected to the dissecting courtesies of Mr. Budrys.

For Mr. Budrys does more than merely review books. He is a surgeon who cuts into hearts, opens them—and often the patients live.

But he is unfailingly polite, to be sure, even when using his scalpel. Look for him on December 23 in the February GALAXY.



WHEN YOU HEAR THE TONE

THOMAS N. SCORTIA

"HELLO," he said loudly in the way old people have. "Hello, hello, this is Fleiker. Hello."

"When you hear the tone—"

"Damn," he said, wheezing. "I didn't dial the—"

"—the time will be—"

"Hello," a voice said, a woman's voice, age indeterminate, certainly not young.

"Hello," he said. "Hello—Walter, why don't you answer?"

"Oh, how nice of you to call," the voice said. "It was awfully nice of you to call."

"Who is this?" he demanded. "Who are you?"

"Yes, yes, happy New Year to you, Michael. Yes, it has been a nice year."

"What kind of nonsense is this?" he snapped.

"A good year. Yes, a very good year—the best since I've retired. I went to the class reunion in Denver last month, just before Christmas."

"Is this some kind of joke?" he said. "New Year? Christmas last month? It's the middle of summer."

"Hello. Yes, yes, happy New Year, dear. Happy nineteen-sixty-three."

"Shut up, damn you. What kind of trick are you pulling. It's nineteen-seventy. It's mid-August and hot as hell and if you don't—"

"That's sweet of you, awfully sweet of you. Thank you, thank you."

"Hello," he shouted, losing all patience. "Hello, hello, hello, hello, damn it, hello—"

"Good night. Merry Christmas—thank you, good night."

"Stop it," he yelled. "Don't go away. Don't try that—"

"When you hear the tone, the time will be—"

"Hello, hello," he shouted.

Click...

"... the time will be exactly—"

He slammed the phone into its cradle and stood, shaking, his eyes misty with sweat. The pulse in his neck throbbed with anger. Cold played across the liver-spotted tissue of his scalp, rousing the few remaining wisps of crepe hair that grew there.

Damn pranksters, he raged. Who the hell did they think they were trying to kid? He stopped, wondering who would want to try such a banal trick.

His nephew's boy? The one with the yellowed teeth, white-flecked mouth opening in the start of a braying laugh?

Or Schulz of Carpenter or Wilkenson? He snorted at the thought. Ineffectual weaklings. The thought of one of them getting the better of him after all these years... They still remembered their hatred of him, though, even at well past eighty when all hatred and lust and sorrow should be dead. Or the vultures downstairs—the endless relatives, whispering, *How is he today? That's good, that's very good.*

Meaning, If he dies it will be just great because of all that money and he's too old to need it or care about what life can bring . . .

Alone, embattled. His withered lips twisted in contempt. He had built, had cut throats and wrecked better than them in the process. Let them go out and grub for it the way he had done with no one to help. Not even his wife, the pretty tinsel thing he had bought after no one else would touch him.

HE SAT for a long moment, looking at the phone. Then, gently, he lifted it from its cradle and, after consulting his phone index (there had been a time when his memory was sharp and unfailing) he carefully dialed his brother's number again.

Click . . . click . . . click . . .

"...hear the tone, the time will be exactly—"

"No," he said and stabbed at the cradle button with his finger. He dialed the number once again.

Click . . .

"When you hear the tone—"

His hand darted forward.

"Wait, don't hang up. Who are you?"

He pressed the phone tightly to his ear, his breath hissing in the perforations of the mouthpiece.

"I said, who are you? I can hear you breathing—"

"Hello, hello, why are you bothering me? It's two o'clock in the morning," the voice said.

"Liar," he said. "It's six in the afternoon, daylight saving time, in the middle of August and the sun is so bright you can look at the asphalt without glasses and you—"

"No, don't shout, Jimmy. It doesn't do to get excited—"

"My name is not Jimmy," he said, trying to control his voice.

"No, it's Board policy and if they want me to retire—"

The same voice, he realized. Female—probably middle-aged. A very pleasant voice, he thought, and then shook off the thought with annoyance. There wasn't any point in thinking that way at his age.

"Hello, who are you?"

"I know, just to June . . . Well, it's been a year . . . Ever since the end of the war, ever since you came back from Korea."

"The war?" he shouted. "The Korean war? Damn, the war's ended over seventeen years ago. Nineteen-fifty-three to nineteen-seventy is seventeen years. Can't you count?"

"Thank you, thank you," the voice said. Middle-aged, but with young overtones. Whom did he know who sounded like that? Someone, someone, someone—who?

"Wait," he pleaded. "Don't go."

"...the time will be exactly six fourteen, daylight sav—"

Click . . .

"Damn," he said, his voice shrill and cracking. His eyes filled with

tears. Ridiculous. He hadn't cried in twenty years, not since his wife had died, and then for pure formality. He would have cried at the death of a favorite hunting dog or of a stranger into whose cortege he had blundered. Tears were easy then because you had strength and were unassailable.

He was too old for crying. Eighty-two, and only the vague warmth of life still animating him with the memory of endless dead years when life might have had some meaning, had he sought for it. Now there was only the leaden silence of his room secreted among many rooms, with whispering servants moving like phantoms through the dusk and beefy young nephews and glassy-eyed nieces waiting for his last gasp, their thoughts clawing over bonds and cash and other empty symbols of eighty-two years.

How terrible, he thought. *How terrible, how terrible, how terrible...*

Terrible? What was terrible?

Growing old. Withering and cracking like ancient celluloid movie film. The images on it broken and dusty. Thrown on a fire, curling and shriveling an instant before extinction and then gone with a single puff of sooty flame.

But age was not that dramatic—not even that significant. He would simply run down, cease to move, become quiescent and the dark men who hovered at hand would

come and do secret things with his body so that his face became a mask of wax and talc and scented rouge and his body shrank in withered majesty secretly within the shroud.

And the young ones, drunk with the negotiable fragments of his life, would scarcely remember that he had been.

"Oh, no," he said softly. "Oh, no, no, no, no, no, there is somebody. There is somebody. Or there was somebody. There must have been somebody."

BUT he could not think of one—not even his brother Walter whom he had fed and clothed and looked after and whose sprawling, middle-aged brood hovered on the edge of his existence like circling condors. Walter did not even answer his phone.

If he could have had someone, somewhere. If in the midst of all his life he had found someone who cared and worried and cheered and wept. But he had not and now not even the possibility existed that...

He paused. The possibility? Vaguely, dimly, the possibility. Only it was late and life had a way of losing detail in the amorphous mass of years that spilled out and vanished, leaving your body older and more tired and wrinkled and crackling and your mind vague and many chambered and without cohesive form.

Walter, he thought. He had been

trying to talk to Walter, who was his one link with life, the only person of his blood remaining. (Forget those creatures downstairs who had been generated out of some ferment that was not a part of him.)

His fingers, stiff with pain and calcification, dialed the number and he waited, hearing the burr of the bell at the other end.

"When you hear the tone—"

"Damn," he shouted. "Damn, damn, damn—"

Click . . .

Again, carefully, patiently, noting each digit, with deliberate precision, all seven carefully dialed digits.

At the sixth digit the sound of ringing . . . not the soft burr but a shriller sound, tinny as though the signal were in a hollow metal-lined room.

"Hello, hello," the voice said.

"Hello," he said. "Who—"

"Oh, it's you, I wanted so much for it to be you again," the woman's voice said.

"Yes, it's me. It's me," he said savagely. "It's me, Mark Fleiker and who the hell are you?"

"Yes, I know it's you, Mark. How could I forget the voice?"

"Forget what voice?" he demanded.

"After all these years, how could I forget the voice?"

"I've never talked with you before," he shouted into the mouthpiece.

"All those times," she whispered. "So few without ever seeing you or touching you and knowing that you were somewhere out there. I wondered where you were during the war—"

"Woman," he said plaintively. "Woman, what kind of a joke are you playing on an old man?"

"Old?" she said. "Are you really old?"

"I'm old, old, old," he said. "I sit here in this pile of a house and watch the jackals gather to fight over my bones."

"It's the war," she said. "This horrible war. Everyone seems taken up in a kind of hysteria. The horrible bloodiness—"

"I hate the thought of the war," he said. "It is an idiot war. There is no end to it and only the blood and the killing and the waste for what reason—It never was our war—"

"No," she said soothingly. "You must have lost someone very dear, but it is our war. It is our war even though its nearly over."

"It'll never be over," he said.

"Only a matter of days," she said "and then we can breathe in peace and be truly free of all the dreadfulness. They've crossed the Rhine and—"

"Crossed the Rhine?" he shouted. "Are you mad?"

"—only a matter of time—" the voice said, its quality suddenly tinny.

"What's crossing the Rhine got to do with a lot of backward Asiatics in a fifth-rate jungle nation and the death of everything—of my nephew who was the one good thing that came out of my flesh?"

"—the Nazis," she said. "The horrible Nazis—"

Then, *sputter . . . sputter . . . sputter . . .* from the phone and—

"When you hear the tone the time will be exactly—"

HE SLAMMED the receiver to the carriage and breathing heavily, stumbled to the bed. He lay weak and fearful.

The sense of being utterly alone swept over him. Alone, alone, alone—the words clattered off the walls, shattered against his inner ear, echoed down the flesh passages to the inner chambers of his being.

Alone.

Except for an insane voice from somewhere that still fought a war involving crossing the Rhine and Nazis as villains—a voice that recognized his with pleasure.

With pleasure, he thought in surprise—but only a voice. People did not acknowledge him with pleasure. They pretended and thought he didn't see through their transparent stratagems to ingratiate themselves with him. He knew. Knew. Knew. As he knew the doctors who told him there was nothing wrong with him.

"There's nothing wrong with

you, Mr. Fleiker. Age, yes, with all the small degenerations of age, but you're sound as a dollar."

"That's . . . not very damned sound," he would growl.

"Well, you know what I mean."

"I'm dying," he would say.

"You think you're dying," the doctors would say softly.

"It's the same thing."

"Perhaps." Pursued lips. "Perhaps. Perhaps."

What would they think now? The final delirium. Hearing voices on the phone that told him they were talking from the year after the Korean War. 1953 or 1954? When were armies crossing the Rhine. 1945? A voice that knew him. That spoke to him gently. (People had seldom spoken to him gently, even his dead wife who had scarcely spoken at all.)

His ancient heart leaped for an instant. His eighty-two-year-old heart pounded for an instant and he fell back against the pillow, blood coursing through the fine veining of his face, flushing his nose, lips, cheeks with unexpected warmth.

"Oh, God," he said "Oh, God, to play such an irony on me." Cruel, vicious God. (All Gods are cruel and vicious. You've worshiped many of them.) Cruel and vicious God.

His quivering fingers found the phone. Dialed. Faltered. Dialed again. He held the receiver to his ears.

He waited.

Click . . .

"When you hear the tone, it will be."

He sobbed. Pressed the button. Dialed again. Waited. Breathing. Breathing. Breathing.

"Hello?"

"Hello," he said excitedly. "Hello, it is you? Is it you?"

"Mark," she said. "Is it you? After eight years? Is it you?"

"Yes," he said. "Yes, it's Mark. It's Mark."

"I thought I would never hear your voice again. After so many years to hear your voice again."

"It's Mark," he said choking.

"You don't sound well," she said.

"I'm not well," he said.

"If I could come just once to you."

"If you could," he said. "If only you could."

"I don't even know your last name. We've spoken so few times and I don't even know your last name."

"Of course, you do," he said. "It's Fleiker. Mark Fleiker."

"That can't be right," she said. "There's a Mark Fleiker who's a presidential advisor. I met him once—at a reception. My, he was handsome—but so intense."

"That was I—that was years ago," he said.

"No, not the same at all," she said. "Mark, such a sense of humor. Not the same at all."

The voice carrying a frown . . . returning to a . . . a caress.

"That was years and years ago," he said. "That was just before the war."

"Will there be a war?" she asked. "Pray God there won't be a war."

"The year before the Japs bombed Pearl Harbor," he said. "In nineteen-forty-one, just before Pearl Harbor."

"Mark, I don't understand you," she said.

. . . Sputter . . . sputter . . . The connection was going, he knew.

"Don't go," he shouted.

"Mark," she said. "I can't hear you. I don't understand."

"Don't go," he shouted, "I love you. Don't go."

"Mark . . . *Sputter . . .* Mark, you know it's nineteen-forty-one now. You know it's December sixth, a Saturday when school is out. You know it's . . ."

Click . . .

"When you hear the tone—"

December 6, 1941! When you hear the tone—1941—December 6!

His hand clawed at the sheets, made cabbage folds, knotted them. What was she? Where was she? Who was she?

He didn't even know her name. A voice without form, without body, without face, without name. They must have passed each other briefly once. Touched hands, perhaps. So long ago and he had not known.

IN THAT single instant the sense of aloneness, of being lost on the edge of time-space had made him say it. "I love you." The unknown emotion had welled inside his ancient frame, coursed through his sluggish blood and suddenly he knew. He knew it with fear and hope and anger and a sense of utter loss.

Love?

Love doesn't come this way, he told himself. You don't fall in love with a phantom, with something that's a faint image projecting through time into the dying present. Youth is a time for love. Not love. Not now. Not now. Not with a phantom. Not this thing to torture me in my last hours, he thought. Oh, no, God, not this, not this, not this.

He heard them pattering in the hall and he realized he was breathing heavily. The vultures were waiting. They heard him breathing his excited rasping breath and they were flocking close. He heard the doorknob turn and the door began to open silently.

"Stay out," he shouted. "God damn it, stay out. I'll let you know when I want you. Stay out."

The door closed and he was alone again. Alone as he had always been. Alone now except for the memory of a voice that stretched across years and years from the past and belonged to a woman he did not know and would never know.

What marvels, what magic, his little boy mind in the old, old mind said. Magic that feeble electric currents over copper wires should span distances—and years. Alexander Graham Bell, magician. Mr.—what was his name—Mr. Watson, sorcerer's apprentice. Those two half a century ago with cauldrons and eye of newt and wire of copper and oil of vitriol and certain discrete particles of carbon and...

And he didn't even know her name.

Delicate voice, tender voice, object mystical and unseen. Of love? One does not love a voice and cannot love a voice and you don't fit your aging ideal to a mere voice.

Only he had. In an impossible moment, in an insane working of the chemistry of his aged body.

And he didn't even know her name.

HE LAY for many minutes, looking at the cradled phone. Thinking wondering, fearing, hoping, dreading, dreaming, then... He couldn't stop it. He couldn't halt his spotted hand with its lean, gray-bristled fingers imbued with a life of their own they drifted across the sheets, gained new strength, became purposeful, grasped, held the instrument tightly, lifted...and his other hand with sure touch was dialing. Any number. It made no difference. Any number. Dial the letters: 6... N... 3... E... 9... W... 5

... L ... 6 ... O ... 8 ... V ...
3... Why not? Why not? The world is insane and dying and I am insane—but suddenly terribly, impossible, very much alive.

Click...

"When you hear the tone the time will be—"

Click... click... click...

"Hello." Firm young, vigorous voice. Gentle, strong.

"It's Mark," he said.

"Mark? Mark?" she said.

"Mark," he said.

"Oh," she said. "I remember. It's been such a long time."

"It's been only minutes for me," he said.

"I don't understand," she said.

"What year is it?" he asked.

"Nineteen-thirty-three," she said. "You know that."

"Listen to me," he said excitedly. "I'm not insane and I know you will think so—but listen to me. Here it's nineteen-seventy."

"Oh, my," she said. "That's a peculiar joke."

She didn't get angry, he thought. Nor annoyed. Marvelous.

"Believe me," he said. "Here it's nineteen-seventy. I've been calling you—talking with you all evening. Only it's you later and later and later."

"That's strange. What a lovely idea," she said.

"It's real," he told her. "It's real."

"A strange idea. A beautiful idea," she said.

"It's horrible. I can't ever see you."

"I shouldn't do this," she said. "But I'll see you."

"I can't," he said. "I can't, I can't. Don't you understand? It's not the miles."

"Where are you?" she asked.

"San Francisco. Twin Peaks."

"I'm only blocks away. Jones Street! Nob Hill," she said. "I've lived here for years. My family before me. Only blocks away."

"Years away," he said.

"You sound so lost."

"You are so lost," he said.

"You sound so... I shouldn't but—"

Sputter... sputter...

"What's your name?" he asked.

Sputter.

"Your name?" he pleaded. "Your name."

"Angela, you know that. A fine pretty Victorian name. Angela—"

"Angela what?"

Sputter.

"When you hear the tone it will be—"

Click...

He sobbed.

His fingers dialed frantically. Any number. Any number.

Click...

Click...

"Hello." Young voice.

"Angela?" he asked.

"Yes, who's this?"

"Mark," he said.

"What a nice name," she said. "I don't know any Mark though."

"What's your last name?" he asked.

"I don't recall ever meeting a Mark."

"We've met," he told her. "But I don't know your last name."

"You have such a nice voice," she said. "So young. Oh, I really shouldn't say that—"

"Your last name," he pleaded.

Sputter...

"Why, no harm in telling, I suppose. It's Haym—"

Sputter...click...

"When you hear—"

"Oh, dear God," he said aloud. Just one second more and he would have had it. One second more. Fingers dialed frantically.

Click...

"When you hear the—"

Click...

"Hello—hello?" A man's voice, deep, resonant.

"Hello," he shouted.

A grunt of displeasure.

"Hello," he shouted.

"Mr. Watson," the voice said. "Come here. I need you."

After that there was silence. Long, long, long, dead silence. Not even a sputter. Not even a click.

Only silence.

He returned the receiver to the hook, feeling tired and old and quite ready to close his eyes and never open them again.

IT WAS too late. Rather too early. Back to the very beginning

and beyond that year, that day, that moment there would be nothing. The ancient copper would be dead because before that instant when Mr. Bell had spilled the acid of the battery and called for his helper, there was nothing. No voices, no Angela, no hope—ever.

He felt like sobbing but it required too much energy. He had little left. There was only lying in bed and staring at the wall and listening to the whisper of the doctors and the insipid questions of endless nephews and knowing that the days stretched out without hope, without feature, without pity.

Angela Haym—and something else. One syllable. Two syllables? He wasn't even sure he had the first one right. There had been so much static and the quality of the transmission from the primitive phone was so bad.

He grabbed the directory and thumbed to the H's. Impossible. Haymaker—Hayman (See also: Heyman — Heiman — Heimann; Heymann—Hyman). Then Haymend, Haymer, Haymond. An impossible task. He counted them. Thirteen, not counting commercial listings under Haym...then Heym...then Heim...

Then seventy-eight listings. Impossible.

He didn't even know if she were still alive. Or still in the city. Or even that she still had the same last name. She could have married.

She hadn't on the first call. At least she hadn't seemed married. A schoolteacher.

Memory. What had she said? After she retired? She had gone to the class reunion. In Denver?

His fingers skipped to the yellow pages. Hopefully. Under Associations. University of Denver... The Alumni association. One impossible chance.

He called. A woman answered. He invented a story. He couldn't remember the exact last name. Could she help? After long moments he had three names that might be she.

He started to call. Praying.

On the third call a voice answered and he said breathlessly, "Angela Haymeyer?"

"Yes," the voice said.

"This is Mark Fleiker."

"Who?"

His heart sank. This was the last

one. There was no other. What would he do?

"Mark Fleiker," he said tiredly.

"Oh, Mark," she said. "After all these years. After all these years."

Breath caught in his throat. Sudden panic, fear.

"Angela," he said, "can you entertain a gentleman caller? An old friend."

"After all these years? An old friend?"

"An old friend," he said.

"What a pleasure it would be!"

"It will be," he said, feeling suddenly alive, young-old—alive.

"It will be such a pleasure after all these years," he said.

And, not waiting for the click, he replaced the receiver and began to dress.

"After all these years," he said aloud to the empty room and felt very, very good. ★

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who's who on the MOON

Donald H. Menzel

WHEN GALILEO, in 1610, first turned his newly invented telescope on the moon, he saw a new and independent world. He saw mountains and flat, dark areas, which he took to be seas. He was not a skilled artist, but he was the first to produce a map of the lunar surface. Other astronomers followed, preparing maps of increasing accuracy. In 1647, the amateur astronomer, Hevelius, published a map that was appreciably more detailed and accurate than any of the earlier charts. He assigned 250 names to various moon features, most of them for geographical features known on earth.

Several years later, in 1651, the Jesuit astronomer, Riccioli, prepared a still more accurate map whose features he named largely for famous scientists, philosophers and theologians. Dozens of other selenographers, professional and amateur, followed, each with his

own suggested list of names until, by the twentieth century, few maps agreed.

To bring some order out of chaos, the International Astronomical Union, in 1922, appointed a committee to study and clarify the nomenclature. Its final report, prepared by Mary Blagg and Karl Muller was accepted by the Union and published in 1935. At that time, their catalog contained 672 named formations.

AND so matters remained until October, 1959, when Soviet scientists first photographed the moon's far side from an orbiting vehicle and transmitted the pictures back to earth by a television technique. In 1961, the I.A.U. recognized this achievement by approving names for 18 of the features shown on the photographs. Of these, four could not be identified on later and sharper photographs and had to be relocated.

In 1964, the Union approved some 65 new names, assigned to features that wander in and out of view on the very edges of the lunar surface visible from earth. But the most significant change made that year was the recognition of the growing importance of lunar studies. Prior to that time, the moon had been lumped with the planets, but then it was given its own special commission of which—to my surprise—I was asked to serve as President.

Three years later, at the meeting in Prague, Czechoslovakia, new lunar data had come in from both the USA and the USSR, especially the excellent photographs taken by vehicles of the NASA Lunar Orbiter series. Hence no new assignments were made, but a special Working Group was appointed, of which I was Chairman, to name the craters on the moon's far side. Other members included the Soviet astronomer A. Mikhailov, who was later replaced by B. Levin. M. Minnaert of the Netherlands was the third official member and A. Dollfus of France, the new President of the Lunar Commission, was also a member, ex-officio.

For three solid years our Committee of four worked hard at its assigned task. We wanted the moon to be truly international. Hence my first act was to write to the National Academies of Science or equivalent bodies of all nations of the world, asking them for suggestions concerning their own famous scientists. Members of the Lunar Commission supplied additional names until we started out with a card catalogue containing more than 1500 suggestions. Paring this down to the desired number of about 500 was an arduous task. We divided the final list into about five orders of distinction and then assigned the names by lot to the craters also divided into five categories.

The most delicate question concerned the possibility of recognizing living astronauts. For nearly forty years the IAU had ruled against the inclusion of any living individuals, but our Committee felt that the inauguration of the age of space, which included actual travel to the moon, warranted special treatment.

One especially large feature on the moon's far side, with a complex array of smaller craters around it, received the name Apollo, to commemorate the entire Apollo Program and all those who had contributed to it. The three living astronauts, Anders, Borman, and Lovell, the first to circumnavigate the moon, received features near the crater Apollo. Aldrin, Armstrong and Collins, the first to participate in a lunar landing, received previously unnamed craters near the landing site, which was called Tranquillity Base or by its Latin equivalent *Situs Tranquilitatis*. Six living cosmonauts of the USSR also received craters on the far side near the Sea of Moscow, which had been named in 1961. These included, among others, Leonev, the first man to walk in space and Tereshkova, the first and, to date, the only female cosmonaut to achieve orbital flight.

I should state that the Committee quickly agreed to rule out all political figures. We also ruled out philosophers and religious figures.

Our final list, which contained 513 new names, was approved at the final General Assembly of the International Astronomical Union on August 27, 1970, in Brighton, England.

I CAN scarcely comment in any detail on a list of names so large. Physical scientists were in the great majority, especially when they had made some special contribution to astronomy.

There were, of course, a number of Nobel Prize winners and Nobel, himself, was also honored. We found room for a number of inventors: Bell of the telephone, Marconi of wireless telegraphy, de Forest of the vacuum tube and Montgolfier of balloon fame. I was pleased that we agreed to honor several amateur astronomers of unusual distinction, among them Albert L. Ingalls, who popularized the making of telescopes, wrote frequently for *The Scientific American* and served as one of the founders of the Amateur Telescope Makers.

From the large list of author candidates we selected only a few. Chaucer made it because he had written a treatise on the astrolabe. We selected Dante for his (largely erroneous) contributions to cosmogony. Readers of *Galaxy* will be pleased to learn that the former science editor, Willy Ley, received the honor. I had had dozens of letters from fans of his, expressing

the hope for such recognition. Two other great writers of science fiction also made it, H.G. Wells and Hugo Gernsback. The annual world award for the best science fiction is called a "Hugo" in his honor. Jules Verne had already been assigned a crater in 1961. George Gamow made it on the basis of his contributions to physics, though he is perhaps better known for his popular writings. The author Cyrano de Bergerac, who wrote of imaginary visits to the moon and the sun early in the seventeenth century took his place among the greats.

The three deceased American astronauts, Chaffee, Grissom and White, who were killed in the ground-fire of an Apollo test craft, received craters near the large crater Apollo. There were two deceased Soviet cosmonauts. Komarov was killed in the crash-landing of Soyuz I, when the parachute failed. Gagarin, the first man to carry out a space flight back in 1961, was killed in a crash on an aircraft training flight.

We thought it appropriate to recognize one other early astronaut, Van Gu, a Chinese inventor who lived about 1500 A.D. According to legend he constructed a manned rocket consisting of two box kites and a seat, with 47 solid-propellant rockets. He perished while trying to take off in the contraption. Similarly, we included the mythical figures of Daedalus

and his son, Icarus. The former was a cunning artisan who, in the second millennium B.C., made wings of wax and feathers so that the two could escape from Crete. Icarus, youthfully exuberant, flew too close to the sun—the heat melted the wax wings, so that he fell into the sea and drowned, while Daedalus flew on and landed safely in Sicily.

These are but a few of the famous names recognized officially by the International Astronomical Union. The assignment was a fascinating and rewarding one. Perhaps the most satisfying experience of all was the moment at Brighton when the General Assembly unanimously passed our recommendations.

The final maps are being prepared by the Aeronautical Chart and Information Center in St. Louis. The complete list, with biographies and latitudes of the craters will probably be published in the *Space Science Reviews*, a journal of space astronomy edited in Utrecht, Netherlands. I'm sure that a good many independent groups will presently issue lunar maps based on the I.A.U. official list.

The complete lunar map on a scale of 1:5,000,000, consisting of three sheets, should become available about mid-October from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402,

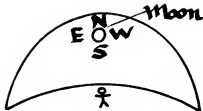
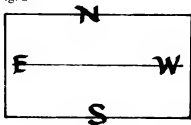


Fig. 1

at an estimated cost of 50 cents per sheet.

THE space age has led to enormous changes in style and convention of astronomical maps, especially those of the moon and planets. When an astronomer, living in the northern hemisphere, faces directly south and looks up into the sky, he will have east on his left hand and west on his right. He sees the moon in the sky and, in the past, chose the compass coordinates on the moon to agree with his own view: north on the top, south at the bottom, east to the left and west to the right, as shown in Fig. 1. As a result his maps of the moon looked something like Fig. 2, with east and west reversed from the conventional use on earth.

Fig. 2



This result came about, of course, from the fact that one makes the maps of the earth while looking down, whereas the astronomer drew the moon map while looking up at the sky. And, to make the situation even more complicated, the astronomical telescopes turn the object upside down, so that scientists usually drew their maps with south up, as in Fig. 3.

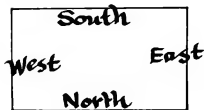


Fig. 3

Astronauts, early in the program, began to find this convention confusing. Finally the International Astronomical Union, the organization responsible for such decisions, dropped the age-old convention and decreed that henceforth maps of the moon and planets would conform to the same convention as for the familiar terrestrial maps, with north at the top, east to the right, and so on. This change required a complete reversal of the directions previously called east and west to become west and east, respectively.

The change was not only necessary; it was timely because the Orbiter photographs contain

new information about the moon's far side and improved information about the near side. New and highly detailed maps have thus become possible.

These changes have introduced certain difficulties. For example, *Mare Orientale*—The Eastern Sea—by the new convention lies on the western edge of the visible lunar surface. This dark, multi-ringed feature is easily the most magnificent circular formation on the moon. Surrounded by two concentric mountain ranges, the *Montes Rook* and the *Montes Cordillera*, this sea is approximately 600 miles in diameter. The new location presented a problem to the Working Group. Should we change its name? For a time we toyed with the idea of calling it *Mare Annulatum*, The Ringed Sea. But we decided, after all, that the original name was quite appropriate. We rejected Kipling's famous lines, "East is East and West is West and never the twain shall meet" as being wrong. For, if you went far enough to the east you would eventually reach *Mare Orientale*.

Just how do astronomers go about assigning latitudes and longitudes on the moon? To understand this problem one has only to see how we have done it for the earth. The earth has a north pole and south pole, fixed by the position of the earth's axis of rotation. The equator, halfway between the

two poles, divides the earth into two hemispheres: north and south. Latitude is the angular distance measured north or south from the equator along the meridian drawn from the equator to the pole through some city or other point of the earth's surface. The latitude of the pole is 90°N . Next we choose some arbitrary meridian and measure longitude east or west from the point where it touches the equator to the foot of the other meridian. On earth, this zero or standard meridian passes through the old observatory at Greenwich, England.

For the moon, we follow the same basic principle. By observation, we determine the position of the moon's north and south poles of rotation. A few people have argued, sometimes vociferously, that the moon does not rotate at all, because it keeps the same face turned always toward the earth. They are, of course, thinking of the analogy of a solid ball attached rigidly to a rotating crankshaft. Actually, the moon's rotation on its axis and its orbital revolution around the earth are quite independent of one another. First of all, the axial rotation is extremely regular and uniform. The axis of rotation is inclined several degrees to the perpendicular to the orbital plane. As a result, for half the month we see a slight distance over the moon's north pole and for the other half we see beyond the

south pole. This slight motion is called "libration in latitude."

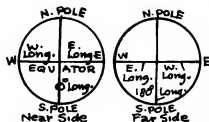
But that isn't the only effect of the moon's motion. The orbit around the earth is not a circle but a pronounced ellipse. How fast the moon traverses the orbit depends on where it is. When near the earth, the moon speeds up; when farther away it slows down. As a consequence, we see some distances around the eastern and western edges of the disk. This motion is called "libration in longitude." Hence we can see from the earth not just one half but five ninths of the lunar surface. Of course, all but a tiny fraction of the remainder has been photographed by special cameras sent to the moon by the United States of America and by the Soviets.

To return to the problem of lunar mapping, we can easily locate the moon's two poles.

Our North Star, however, will not serve as such for the moon, because its axis is tilted with respect to that of the earth, even though the axes of both bodies tend to stay parallel to their original positions throughout the month and the year. The lunar equator lies halfway between the two poles so determined. Then one's fix is a meridian to represent zero longitude arbitrarily through the average position of the side turned earthward.

The compass directions stay the same on both sides. On both sides, east longitude increases from left

Fig. 4

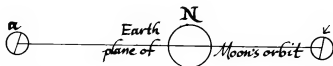


to right and west longitude from left to right.

This new principle of cartography of the moon and planets received the official approval of the International Astronomical Union.

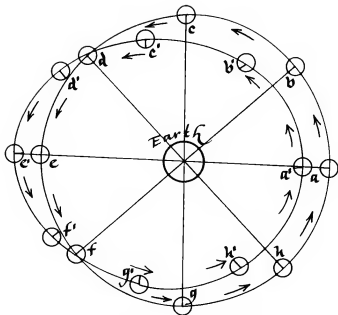
The assignment of selecting names for the craters on the moon's far side was exciting and interesting. Hundreds of persons, not knowing the restriction against living people, have generously offered their own names as "representative of the common man." Others have suggested names of their towns, cities, pets. Several companies, rather brashly, offered their own names, for the advertising benefit. Somehow or other it reminded me of a story I read in my childhood of a manufacturer who built a huge and powerful projector that threw upon the moon as a screen the words:

USE MOON SOAP.



Moon's Libration in Latitude

LIBRATION IN LATITUDE. *The axis of the moon's rotation is tilted about 5 degrees with respect to the perpendicular to its orbit around the earth. Thus, when the moon is at a we see a trifle around the north pole. When it is at the arrow we see around the edge of the south pole. The axis of the moon's rotation tends to move parallel to itself.*

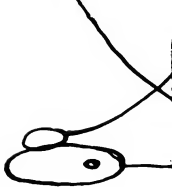


Moon's Libration in Longitude

IF the moon moved exactly in a circular orbit, as in a, b, c—h, meanwhile rotating on its axis, the black spot on its surface would always point directly toward the center of the earth and we would see only the nearer face of the moon.

However, the moon's orbit is elliptical a', b', c'—h' and the moon moves more rapidly when near the earth than when more distant. As a result, during the time it would take for the moon to move from a to b in the circular orbit, it has moved from a to b along the ellipse. The black spot at b no longer points directly earthward. We see a little way around one side of the moon. The moon slows down as it approaches point e. Then we begin to see at f', g', and h', part way around the other side of the moon.

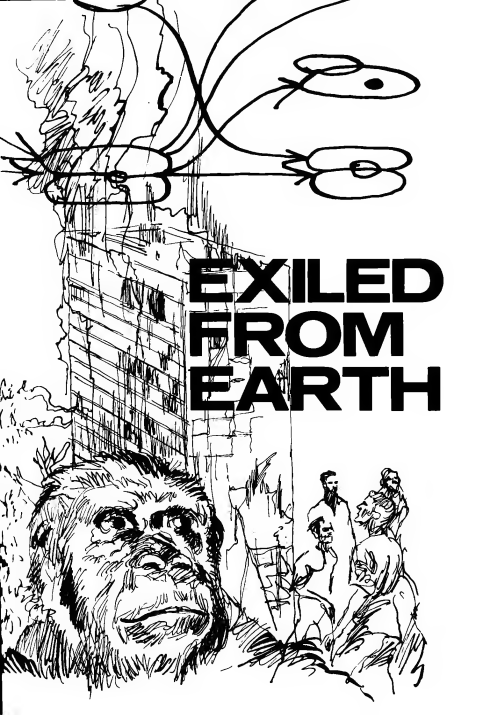
FIRST OF TWO PARTS



BEN BOVA

***Genetics had given man
control of his species.
Was it the nature of the
species to reject it?***





EXILED FROM EARTH

THE General Chairman—here he had, by custom, no other name—paced across the soft carpeting of his office, hands clasped behind his back. He stopped at the wide sweep of windows that overlooked the town.

There was little of old Messina to be seen. The storied city of ancient churches and houses chalk-white in the fierce Sicilian sunlight had been all but swallowed up by the metal and glass towers of the world government—offices, assembly halls, hotels and residence buildings, shops and entertainment centers for the five million men and women who ruled Earth's twenty-some billions.

In the air-conditioned, sound-proofed office atop the tallest of all the towers, the General Chairman could not hear the shrill voices of the crowded streets below, nor the constant growl of cars and turbotrucks on the busy thoroughways.

At least we saved some of the old city, he thought. The feat had been one of his first successes in world politics. A small thing. But he had helped to stop the growth of New Messina before it completely choked and killed its predecessor. The new city had now remained the same size for thirty years.

Beyond the waterfront fishing boats the straits sparkled invitingly under the sun. And visible

beyond them was the tip of Italy's boot, Calabria, where peasants still prided themselves on their hard-headed stubbornness. High above Calabria's misty blue hills, shimmering in the heat haze, the sterner blue of the sky was too bright to look at for more than a moment.

The old man knew his eyes were playing tricks when he thought he saw the glint of one of the big orbital stations hovering in that brilliant sky. He squinted, worked a forefinger and thumb against the bridge of his nose. Today he seemed to be feeling his years.

He thought about his native Sao Paulo—it had spread like a festering sore all the way from the river to the sea, flattening hills, carving away forests. Teeming with so many people that not even the Population Control Center's computers could keep track of them. No sane man would willingly enter the heart of Sao Paulo—or any large city on Earth. Humans no longer could live in the crawling guts of a city—if they had to, they became something else.

The desktop intercom chimed.

"Yes?" The Chairman automatically switched from the Portuguese of his thoughts to the English of the world government. He pressed a button.

His secretary appeared on the screen. Her face was somber.

"They're here, sir."

"Very well. Send them in."

Six men and two women filed into the spacious office and took seats at the conference table. They carried no papers, no briefcases. Each place at the table had a tiny intercom and viewscreen that linked with the central computer.

They are young—they have vitality, thought the Chairman. *They know what must be done and they have the strength to do it. As soon as all this is settled, I shall retire. Resume my identity as a person—not Mr. Chairman . . .*

Suddenly the prospect of using his own name again in casual contact with his fellow humans seemed infinitely exciting.

Reluctantly he took his place at the head of the glistening mahogany table. The others were silent, waiting. The only sound was a faint whir of the computer's recording spool.

He cleared his throat. "Good morning. Last Monday we discussed this situation and you made your recommendation. I asked you to consider possible alternatives. From the looks on your faces, it seems that no suitable alternative has been found."

All turned to the stocky, round-faced Minister of Security, Kobryn. He had the look of an athlete: tanned skin, short wiry brown hair, big shoulders and arms.

Shifting in his chair self-consciously, Kobryn said, "I see I have been elected hatchet man." His voice was deep and strong,

with a trace of Slavic accent. "All right—the idea was mine originally. We ran all the alternatives through computers. The only safe answer remains permanent exile."

"Siberia," one of the women muttered.

"No, not Siberia." Kobryn took her literally. "It's too heavily populated. Too many cities and dome farms for an effective exile. No, the only place is the new space station. It's large enough and it can be kept completely isolated."

Bernard, the Minister of Finance, shook his head. "I still disagree. Two thousand of the world's leading scientists—"

"Plus their wives and families," the Chairman added.

"What would you prefer?" Kobryn snapped. "A bullet in each of their heads? Or would you leave them alone and let them smash everything we have worked for?"

"That won't work," said Mottern, the taciturn Minister of Technology. "Even if they tried to cooperate with us you can't stop ideas from spreading. And once their genetic engineering discoveries leak out—"

"The world is turned upside down," the Chairman said. He spoke softly but everyone heard him. With a sigh he confessed, "I also have been thinking about the problem—have tried to find alternatives. There are none. Exile is the only answer."

"It is then agreed. Good!" said Kobryn.

"No, not good," the General Chairman said. "Far from it. We are admitting our own failure. Our fear—even terror. We are terrified of a new idea, a new scientific discovery. The government of the world, the protectors of peace and stability, must stoop to exiling some of the world's finest minds. This state of affairs is horrible. Truly horrible."

II

LOU CHRISTOPHER slid into the cockpit of his rocket glider. It fit him as snugly as his flight coveralls. Only his head and shoulders poked above the cockpit's rim.

"Takeoff for the thirty-meter class contest in five minutes," said the loudspeaker at the edge of the crowded field.

Where's Bonnie? Lou asked himself. *She should've been here fifteen minutes ago...*

He looked across the sun-baked field. It was cluttered with sleek rocket gliders, each tilted on one wingtip. They looked as ungainly as grounded pelicans but once in the air, they turned into graceful fliers. Vehicles moved back and forth. Knots of people clustered around each glider, talking earnestly, arguing over maps, tinkering with least-minute impatience on the gliders themselves.

Then everything stopped and they all looked up as a rocket motor roared to life and a glider streaked by, climbing at a crazy angle, heading for the sky.

The man-made thunder rumbled and slowly died. Contestants went back to their tasks of preparation. Lou sat alone. The air was hot, though the hour was still early. The only shade on the field was made by the gliders themselves.

Where is she? Lou liked to work alone; didn't want other people messing around his glider. But Bonnie was different. She was his girl. And her absence at a time like this was unusual. He began to worry. Later he was to remember that Bonnie's absence was the first thing to go wrong today.

He worked the control stick, squinting back over his shoulder to see the ailerons at the ends of the long drooping wings flick up and down in response. Then the rudder pedals, left foot, right, left. In the mirror atop the instrument panel he could see the rudder swing back and forth. Flaps. Elevators. Trim tabs.

"Final check-out for thirty-meter class entries," boomed the loudspeaker.

Lou spotted Bonnie, driving the turbosport across the outskirts of the field, kicking up a plume of dust, her yellow hair catching the New Mexico sun. She slowed down, nosed the car between a pair of gliders and coasted to a stop

in front of Lou's plane. He waved.

She jumped out of the car and Lou found himself grinning, enjoying the sight of her long-legged trim figure and her lovely face, wide-eyed with excitement.

"Randerson's ahead of all of yesterday's entries," she said breathlessly as she ran to the cockpit. "His official distance was twenty-one hundred and fifty-five kilometers. I stayed at the control center while the computer ran off the final numbers. He made it all the way to Spartansburg, South Carolina."

Lou let out a soft whistle. "That'll be hard to beat. Especially after I've been sitting here frying my brains for half an hour."

"Oh—did I keep you waiting?" Her face went from excitement to concern. "Oh Lou, I'm sorry - I thought you'd want to hear about Randerson—"

He laughed. "Forget it. Gimme a kiss, quick. And get my helmet. Here come the starters."

Bonnie dashed back to the car for the helmet as the starting judge and safety officer walked up to Lou's glider. The judge was tall, lean, leathery and in his late forties. He had the high cheekbones and sad, suspicious eyes of an Apache. He turned to the safety officer.

"This is entry eleven. Is he checked out?"

The safety officer, a stocky red-

head, was sweating. He looked down at his clipboard. "Controls check. Structures check. Instruments check. Motors check, except for a slight crack on the lip of number three nozzle. Nothing serious, though. Radio check."

The judge's eyes narrowed. "You sure that nozzle's okay? Don't want him splattering some farmhouse. Remember that dude from Massachusetts last year—busted an irrigation line when he crashed. Left half the county without water for a week. Ruined the corn crop for the whole season."

Pleasant guy, Lou thought. *Wonder what happened to the pilot.*

"It'll be okay," the safety officer said.

The judge shrugged barely perceptibly.

"Okay. Let me see his route."

The safety officer flipped a page on his clipboard and showed it to the judge. He glanced at it, then looked up at Lou.

"Charleston, South Carolina? Going for a record?"

Lou nodded.

The judge seemed more annoyed than pleased. "Let me see his emergency landing sites."

It's all there, everything the rules require and more. I'm not interested in being a dead hero.

Finally the judge looked up again. "Seems good enough. Everybody at those emergency sites been notified?"

"Yes," Lou and the safety officer said together.

The judge smiled charily. "Okay. Cleared for takeoff. And good luck."

Lou exhaled. "Thanks. I'll send you a wirephoto from Charleston."

"You do that," the judge said. And again he smiled, more generously than before.

The judge and safety officer walked to the next glider. Bonnie handed Lou his helmet. He pulled it on. It always scraped his ears.

Bonnie giggled.

"What's funny?"

"The face you make when you put on your helmet."

"You won't laugh when I have cauliflower ears," he grumbled.

She reached up, put her arms around his neck and kissed him. "Good luck."

"Thanks. See you in Charleston."

She returned to the car, hooked the towline to the glider's nose and started the turbine engine.

Her voice sounded in his earphones.

"Ready?"

Lou said, "Let's go."

"You sure that nozzle won't blow out on you?"

"Sure. If it does, I'll steer clear of irrigation lines."

SHE gunned the car's engine. Lou jerked back in his seat slightly. He kept the control stick pushed forward so the glider

would not lift off too soon. The tiny wheels under each wingtip stayed in place as the car gained speed and they bumped across the dusty field. Last trip one of the wheels had worked loose and the wingtip had dug into the ground. The glider had groundlooped and it had taken him two months to put it back in shape again.

He was rolling faster now, clear of the other gliders, out in the open. Bonnie was a good tow. Brush and rocks whirled by. His wingtips cleared the ground and the glider was rolling on its underbelly wheel alone. Lou's left hand reached for the towline release switch.

When he was off the ground, smooth and free, he punched the towline release. The wheels fell away nicely too. The glider climbed easily and he put her into a wide sweeping turn, banked and saw Bonnie in the car racing after the bouncing main wheel as it caromed across the desert. Lou waved to her but she failed to see. Then he slid the plastic canopy shut.

"Entry eleven, this is control. We have acquired you on radar and are tracking you. Approach the starting tower, please. Heading one-three-zero."

"Okay, control. I see the starting tower. Is that you, Billy?"

"Yep. You gonna be climbing as you pass the tower, Lou?"

"Yes."

"Want a countdown?"

"Please."

"All right, you got. Wait just a tick here—okay, fifteen seconds on my mark—*mark*, fifteen seconds "

Lou set the timer on his instrument panel and punched the automatic fire sequence button. A light above it began flashing amber.

"—ten seconds—"

Number three motor will fire last in the automatic sequence, Lou thought. *If it blows, at least I'll be high enough to glide to a landing. If there's enough of the plane left. . .*

"—three—two—one—zero—"

Number one bellowed beautifully and Lou was plastered to his seat, rattling in the vibration of the rocket's thrust. He pulled the stick back into his belly and all he could see was the blue sky ahead of him, scratched by some faint wisps of cirrus far above. He'd pass them in seconds.

"Entry eleven, this is control." A different voice. A stranger. "Abort your rocket sequence and return to the field immediately."

"What? What's wrong?"

"Federal marshal wants to see you right away."

"Federal marshal? You're kidding." The timer on the instrument panel showed that number one's burn was almost finished and number two would ignite. Unless Lou pushed the abort button.

"It's no joke, eleven. Return to the field at once."

"Sorry—tell him to grab a jet and meet me in Charleston."

A splutter of rage came from his earphones as number two ignited. Lou switched off the radio. And crossed his fingers.

He streaked past the cirrus clouds, feeling the rocket's roar rather than hearing it now, with number two burning. The hand of the timer swept around toward the top of the dial again and number three lit off. Instantly Lou could feel the change in the vibration. He clamped his teeth together and the plane shook.

If it gets any worse. . .

But it didn't. She held together. And suddenly the burn was over. The vibration and thunder in his bones died and Lou was gliding fifteen miles above the great southwestern desert, a silent, long-winged bird of plastic and metal heading into the morning sun, coasting far higher and faster than any eagle. The mountains to his left were mere wrinkles and the clouds were thin patches of white resting like frost on ground far below.

THIS was the easy part of the flight, the best part. He was Totally alone. Completely away from all the people who crawled over each others's lives below. A man could only take it for so long

and then he had to get away—away from everybody and everything. This was the best way. Bonnie would be waiting for him in Charleston, of course. And if he didn't make it that far she'd soon jet to wherever he landed. In two days he had to be back at the Institute. It was a good place to work. But nothing compared to this. He shut his mind to everything below.

The sky was a shade of purple you could never see from the ground, clean and pure. A half moon hung off his port wingtip, a pale and ghostly moon, large and close. The only sound was the thin whisper of wind against the canopy bubble. Lou kept the radio off except when he had to make a scheduled report to the ground stations along his route. Amarillo, Dallas, then across the twisting gray snake of the Mississippi, Jackson, Birmingham—the voices from the ground were more excited at each step of the way. His route followed the curving path of the summer jetstream, the invisible river of air that races across the continent and helped keep the glider coasting high above the cares of men.

Inevitably, his thoughts finally turned to his work at the Institute. The geneticists and biochemists were almost where they wanted to go—the experiments over the past six months had turned out even better than they had

hoped. Now they were waiting for Lou to program the computer for them for the next phase. All those brilliant doctors of science were completely hung up until Lou Christopher finished teaching the computer how to handle their work. He grinned to himself. *You've come a long way, for a little kid from a hick college. . .*

And again felt the lift of total freedom. Let the bigdomes wait.

It was an hour or so before local sunset when Lou dipped the glider low enough to feel the turbulence of weather. Up in the high stratosphere and above the sailing was almost always smooth. Suddenly over the Smoky Mountains, the glider began to lose altitude too fast, bounding, lurching in the wave of mountain winds. He had to find thermals and stretch his final glide—or not make Charleston.

Lou turned the radio to control frequency and transmitted: "This is entry eleven, thirty-meter class, from Albuquerque, requesting landing instructions."

Without a moment's hesitation a girl's honey-rich voice answered, "We see y'all, Albuquerque eleven. We're using the old air base, bearing about ninety degrees from your heading. Please turn to frequency tew-fo'-seven for landing guidance. And congratulations! Y'all set a new range record today!"

"Thank you." Lou set the new

frequency on his radio, while the careful part of his mind told him, *It's not a new record until you land the bird in one piece.*

Lou knew that the Charleston club used an abandoned Air Force base, but he was surprised to see how huge the runways were. Those old bombers must have been real monsters. He saw a cluster of people and cars beside the old control tower and dozens of twenty-meter and smaller gliders parked on the access ramp. On closer view, the concrete of the miles-long runways was broken and invaded by patches of grass. Lou touched his skids to the concrete and screeched

bouncing, grinding, lurching—down the runway until a slight rise slowed the glider to a dusty halt.

And it was finished. He sat in the lengthening shadows of late afternoon, suddenly aware that he was sweating. In some distant trees a songbird was warbling. The turbines of many cars were roaring to life.

He saw the storm lightning flicker far to his right. *Stay clear of that.* A thunderstorm could snap the wings off the glider in an instant.

The plane had started its flight like a rocket, then coasted like a baby satellite. Now it was flying like a soarplane. Lou was stretching for the last few precious kilometers, looking for thermals, sailing from one rising bubble of heated air to another, try-

ing to avoid unpleasant things like mountainsides and trees and TV masts.

Earlier in his flight he had had the radio turned on only intermittently. Now he kept it on full time. There was a good deal of chatter on the air but he dialed it all out and stayed with Charleston's automatic homing signal. That was his goal. The beeping signal faded as he lost altitude or dipped closed to a jutting hill. It grew louder as he soared upward and came closer to the city.

Charleston came in view. The long shadows of late afternoon made details hard to recognize but he made out the city, the bay, the islands. Fort Sumter somewhere among them. He could even see an excursion boat sliding smoothly across the bay, trailing a white wake. Charleston was still what the social engineers called a viable city; not large enough for its inner sections to have turned into barbaric concrete jungles. As in New York and most other cities.

His shoulders creaked painfully as he raised his hands to unlatch the canopy. He stood up on the seat and stretched, then watched the procession of cars streaming down the field toward him. They were tooting their horns in greeting. Where was Bonnie? He couldn't see her in any of the dozens of open-topped cars.

He clambered down stiffly from the cockpit and people reached

him, shouting and laughing, shaking his hand, pounding his back. A girl kissed him.

Next a tall, hard-looking, thick-bodied man stepped up and put a heavy hand on Lou's arm.

"Louis Christopher, I have a Federal warrant for your arrest."

III

BY THE time the marshal's unmarked copter flashed over the skyline of New York, Lou was furious.

"Why won't you tell me what this is about?" he shouted at the marshal who sat beside him on the back bench. The two front seats were empty—the copter was flying on autopilot. Its electric engine hummed quietly; most of the noise in the cabin came from the blurred whirring of the main rotor.

The marshal sat back, his burly arms folded across his chest and his sleepy eyes partly closed.

"Listen, mister, the phone woke me up at four this morning. I had to race out to the jetport and fly to Albuquerque. You hot-shotted out of there even when you were told not to. I had to grab another jet to Charleston. Know what my wife and kids are doing right now? They're sitting home, wondering whether I'm dead or alive and why we're not all out on the picnic we planned. Know how many picnics we can afford on a marshal's pay?

Been planning this one all year—had a spot in the upstate park reserved months ago. Now it's going to waste while I bomb all across the country after you. So don't ask questions—understand?"

Then he added: "Besides, I don't know what kind of mess you're in. I had word to pick you up, that's all. When you hot-tailed out on me in Albuquerque I swore out a warrant for you."

Lou said, "Well uh—I'm sorry about your picnic. I never had a Federal marshal after me before—but what I'm really worried about is my girl. She was supposed to meet me in Charleston. Her name's Bonnie Sterne—blond, about five-six."

"I told you—don't ask questions." The marshal closed his eyes altogether. "I wasn't looking for anybody except you—if that's what worries you. I haven't heard of any pickup out for Bonnie Sterne. The way those others were mauling you in Charleston, I'm surprised you're worried about just one girl."

Lou frowned. The copter was now circling over the East River and the old United Nations buildings, in the last blood-red light of the dying sun. The buildings were stained by a century of grime and the windows were caked with dirt—once-beautiful marble was cracked and patched—but the tower was graceful and tall.

Two men waited on the landing

pad. As soon as the copter's wheels touched the blacktop the cabin's hatch popped open.

"Out you go," said the marshal.

Lou jumped out. The marshal reached over and yanked the door shut before Lou could turn around. The copter's motor whined—it lifted off in a spray of dust and grit.

Sun's already down, Lou thought. *He'll never make it to that picnic.*

The two men were walking briskly toward Lou. One was small and slim, Latin-looking. Probably Puerto Rican. The breeze from the river flicked at his black hair. The other somehow looked like a foreigner. His suit wasn't exactly odd, but it didn't look exactly right, either. He was big, blond, Nordic-looking.

"Please come with us," said the Norseman. And sure enough, he had a Scandinavian accent. "It is my duty to inform you that we are both armed. Escape is impossible."

"Escape from what?" Lou started to feel exasperated again. "What's this all about? Where's my girl? What's going to happen to my glider? Why—"

"Please," said the Puerto Rican softly. "It is getting dark. We should not remain outside any longer. This way, please."

The UN building looked a little better inside. The corridor they walked down was clean. But the

carpeting was threadbare and faded with a century's worth of footsteps. They took a spacious elevator car, paneled with peeling wood, up a dozen floors. Then another corridor, and finally a small room.

The room had one occupant.

"Dr. Kirby," Lou said.

SITTING on a sofa at the other side of the little room was Dr. John Kirby of Columbia-Brookhaven University. He was in his mid-fifties, white-haired, nervously thin—he had a pinched face, a bent and predatory nose.

Kirby said, "I don't seem to recall—"

"Louis Christopher," said Lou. His two escorts left him with Dr. Kirby and shut the door. "We met at the Colorado conference last spring, remember?"

Kirby made a vague gesture with his hands. "There are always too many people at conferences."

Lou sat on the sofa beside him. "I gave a paper on computer modeling for forecasting genetic adjustments. You had a question from the floor about the accuracy of the forecasts. Afterward we had lunch together."

"Oh yes. The computer fellow. You're not a geneticist."

Kirby's eyes still did not seem truly to recognize Lou.

"Do you have any idea of why we're here, Dr. Kirby?" Lou asked.

Kirby shook his head. He seemed dazed, out of it. Lou looked around the room. The furnishings were comfortable enough—a sofa, two deep contour chairs, a bookshelf full of tape spools, a viewscreen set into the wall. No windows, though. Lou got up and went to the door. Locked.

What could have happened to Bonnie?

The feeling that she, too, was somehow involved in what was happening nagged him. He turned back to Kirby. The older man's face was sunk in his hands.

"Are you okay?"

"What? Oh, yes—I'm all right. Merely . . . well, frankly, I'm frightened."

"Of what?"

Kirby fluttered his hands again. "I—I don't know. I don't know why we're here, or what they want to do with us. That frightens me. My whole life is predicated on everything's having a reason. They won't let me call my wife or even a lawyer."

Lou paced the room. "They grabbed me when I landed my glider. My girl was supposed to meet me—but she wasn't there. I don't know what's happened to her." He moved between door and sofa. "I'm worried. We were supposed to fly back to Albuquerque to night."

The door opened. The same two men stood in the corridor.

"You will come with us, please."

Kirby started to stand up. But Lou said, "No, I won't. Not until you tell us what this is all about. You can't arrest us and push us around like this. I want some talk."

The Norseman pulled a needle-thin gun from his tunic. It was so small that his hand hid all of it except the slim barrel.

"Please, Mr. Christopher. We have no desire to use force. You are not technically under arrest—therefore you have no need for a lawyer. However, you are wanted for questioning at government headquarters in Messina. It would be best for you to cooperate."

"Messina? In Sicily?"

The blond nodded.

"But—my family—" Kirby said in a shaky voice.

"They have been informed," the Puerto Rican said. No harm will come if you cooperate with us."

Lou shrugged, headed into the corridor. The Norseman tucked his gun back inside his tunic. The four men walked slowly toward the elevator, their footsteps clicking on floors and echoing from the walls. When they reached the elevator the Puerto Rican touched the DOWN button and instantly the elevator doors slid open.

The building seemed empty except for Lou, Kirby and their captors.

Lou stepped into the elevator,

whirled, grabbed the Puerto Rican and hurled him into the Norseman, who still stood in the hall with Kirby. They went down in a tangle of arms and legs, shouting. Lou punched the DOOR CLOSE button and yelled to Kirby to get into the car.

Kirby stood frozen, his jaw hanging open, as the doors started to slide shut. The Norseman was still on the floor, but he had pushed the Puerto Rican off and was reaching for his gun. The doors shut. Lou pushed the GROUND button and the elevator started down. He could hear somebody pounding on the metal doors at the floor above.

On the ground floor he tried to retrace his steps back to the landing pad outside. He got lost in the corridors, finally saw an exit sign and banged through the doors. It was full night outside, dark and damp-cool. The ripe, acrid smell of the garbage-choked river was a sudden shock to Lou's senses. The city was almost completely dark; only a few lights shone, mostly high up in skyscrapers where people had their own power generators and had barricaded themselves in for the night.

He heard footsteps and flattened himself into the deeper shadows along the wall.

The Norseman's voice reached him: "Shall we turn the lights on?"

"And attract every gang of pack rats on the East Side?" the Puerto Rican answered. "You don't know

this city very well. He'll never live out the night alone. Either he'll come begging at our doors inside of an hour or he'll be dead. No one can get through a night on these streets alone."

"My orders are to bring him to Messina unharmed," said the Norseman.

"You want to search for him? Out there? You'll be killed, too."

They said no more. Lou could sense the Norseman shaking his head, not satisfied, but not willing to risk his own skin against the city streets. Lou heard a door click shut. He slid along the wall carefully and found the door he had come through. It was locked from the inside.

He turned away and looked at the city again with new understanding. He was alone in the city.

And the night had just begun.

IV

HHE HUNKERED down on his heels, resting his back against the rough wall, and tried to think. He remembered school days in Maryland, when the best way to show you had guts had been to go into Baltimore at night. But you went always with no less than a dozen guys—and you didn't go far. Still, John Milford had been killed on one trip—Lou remembered stumbling over his friend's mutilated remains as he had run for his car that night.

Cities were worse now. And this was New York.

If I can get to the jetport in one piece, Lou reasoned, I can get back to Albuquerque. Maybe Bonnie's waiting for me there.

The old JFK airport was still functioning somewhere out on Long Island. How to get there was the question.

He heard the distant whisper of a turbocar. The sound grew louder. He stood up and walked across the blacktopped courtyard, heading for it. From his left a glimmer of light moved toward him. A railing bordered the courtyard—below it, on a sunken roadway, he saw the lights on the approaching car. The roadbed was patched and rough but apparently some cars still used it.

He leaned over the railing and tried to signal. The speeding turbocar roared past, making his ears pop, the scream of its engine explosively loud between the walls of the depressed roadway. A puff of hot, grit-laden, kerosene-smelling air blew into his face.

Probably no driver in his right mind would stop to pick up a stranger in the city.

He made out a pedestrian bridge spanning the road, down at the end of the courtyard. He trotted to it. A wire screen fence blocked access to it. He scrambled over it, crossed the bridge and found himself on the sidewalk of

an empty city street. He took stock.

The city around him seemed deserted, lifeless, though people lived here by the tens of millions. But most were barricaded in for the night, terrified of those who roamed the dark.

And the rest?

Another car raced past below. The deafening noise died and a new sound came.

"Goin' somep'ace?"

The voice was like a knife through him. Lou jerked around, startled. A lean youth in rags grinned toothily at him.

Another voice called out from the darkness across the street, "Whatcha got, Pimple?"

"Stud in a funny suit—"

Three shadows converged on Lou and his accoster from across the street. Lou stood frozen.

"Funny suit," agreed the middle one of the newcomers. He was also the shortest in the group. All wore the hard, hungry look of starvation.

The one in the middle seemed to be the leader. He eyed Lou carefully, then asked, "Got a pass?"

"What?"

"On Peeler turf you got to have a pass to go through."

"No."

"Humpin' right you ain't. Nobody gets a pass except from me—and I don't give em."

All four laughed.

The leader asked, "How much skin on ya?"

"I don't understand."

"Skin, leaves, pages, paper, bread—"

"Oh, you mean money." Lou shook his head. "Nothing. I don't carry—"

The small of his back exploded. Lou sagged down to his knees, pain screaming through him. The leader stepped up in front of him. Lou stared into hard, glittering eyes.

"I—"

Smiling, the leader rocked back deliberately and swung his fist into Lou's mouth. Someone else kicked Lou in the chest and he toppled over backward, gasping for breath. His mouth filled with blood. Tiny bright lights flashed and swam in his gaze. He could not see.

He felt their hands on him, ripping his suit. They rolled him face down on the filthy sidewalk. They pulled off his boots. His mouth was numb. His back and ribs flamed with pain when he tried to move but he forced his breathing back to normal, fought his way to a crouching position when they released him.

"Honest, stud, aintcha?" the leader said, grinning. "No skin, tol' truth. But boots is somethin' ta howl for."

Lou stayed in his crouch and rubbed at the fast-caking blood on his chin. His four captors were ranged in a half-circle around him, looming over him.

"Okay," said the leader. "How

we gonna get rid of 'im? The same way as always?"

One of the four flicked open a knife and started giggling.

Lou uncoiled from the ground and slammed straight into the leader, bowling him over. He pounded down the darkened street, rounded a blind corner. Something sharp bit into one bare foot but he kept going, heart pounding, breath choking him. Lou cut to the middle of the street. They raced out to meet him. One overshot him; the other took a kick into the groin and doubled up.

Lou headed for the lights again. A knife glittered past his head and clattered on the trash-strewn pavement. Lou's lungs were in flames, his heartbeat a deafening roar in his ears. Someone grabbed at his waist. Lou spun free, leaned into a straight-arm, his whole body behind it. His attacker dropped. He sprinted out into the brightly lit avenue.

"Hold it," roared the leader. "Stop. Don' cross the line."

Lou stood in the middle of the broad avenue, chest raw and heaving, ears bursting with the hot drumfire of his pulse, legs shaking with fatigue. The gang bunched together on the sidewalk.

"Good run, funnyman," called the leader. "Lotsa luck."

He raised his hand, laughing.

Lou saw a knife in that hand, saw the hand snap forward, saw

the knife fly through the air toward him. He jumped back, toward the far side of the street. The knife hit point first on the black-topped street and stuck there, quivering. Now the other boys were slowly reaching for their knives, getting ready to throw.

Stumbling, nearly unconscious from exertion, Lou backpedalled and then turned and staggered to the pavement on the other side of the avenue. Back away from the lights, into the shadows of a doorway. The hunters stood on the opposite sidewalk, laughing expectantly.

A pair of hands grabbed Lou's arms. "Whatcha want, pinkey?"

Lou blacked out.

"A hunt—a hunt—" he heard someone shouting from behind him.

Other voices shouted up ahead, and from a side street too. Lou pulled up short. He saw an alley to his right. Dead end, most likely. He walked slowly and quietly past the alley and toward the corner of the street up ahead. A slow shadow is less visible than a fast-moving one. He could feel himself trembling. The pain in his feet was buried beneath fear. From down the street he heard the scrabbling sounds of feet coming swiftly toward him.

"Try that alley," somebody said, half a block behind him in the darkness.

Lou turned the corner and

started running again, senses alert.

He lost track of time. Moments blurred into one sustained steady effort—time ceased to matter. He heard voices from all directions. From shadows everywhere.

Once he tried to get into a building but the place was a fortress. An electrified door nearly knocked him out.

"Hey, head 'im off. . . don't let 'im get across the avenya—"

The voice moved. Lou picked up the direction and saw a glow of light a few blocks ahead. One of the main avenues, still lighted? Lights meant civilization and civilization meant safety. Lou started running.

"Hey, there he goes—get 'im!" The same voice, moving to intercept him.

Feet sounded behind him. From around a corner, two figures appeared—one probably owner of the voice—knives in hand.

V

HE AWOKE under a light, a single naked bulb set in a ceiling. A half-dozen youths stood in a loose circle around him. Black youths. Another gang.

He pulled himself up to a sitting position. Every part of his body ached.

The only furniture in the room was an antique wooden school desk, battered and carved with hundreds of initials. A black man

sat at the desk. On the wall behind him was an old poster showing a huge lion leaping through a ring of fire. The top of the poster had been ripped away. Lou could make out the words. . . EST SHOW ON EARTH, APRIL 15 TO 29. It made no sense to him.

The black man at the desk was immense, the largest human Lou had ever seen. He was not fat—he was a collection of gigantic muscles on a mountainous frame. He looked out of proportion to the rickety desk; he loomed over it and Lou. His only visible clothing was an open vest. His black skin gleamed in the glare of the overhead lamp. Hard to tell how his age—he could have been in his early twenties or ten years older.

He was talking to one of the others in the room, ignoring Lou.

“... only way’s gonna be to give ‘im back. Otherwise the peace between us an’ the Peelers gonna get busted wide open.”

“He’s ours,” the other answered hotly. “They lost ‘im, we got ‘im. Makes ‘im ours, right?”

The rest muttered agreement.

“You want the Peelers up here after ‘im? Ready to fight the whole pack? Tonight? ‘Sides, he ain’t got nothin’ on ‘im, he ain’t *worth* keepin’!”

Lou realized they were talking about him. “Hey, wait a minute—”

“Shuddup, pinkey.” A toe

nudged his tender back. Lou winced and closed his mouth.

“Naw, wait,” said the giant, looking down at Lou. “Know where you are, white man?”

Lou shook his head.

“You’re in the secret headquarters of the Top Cats. I am N’Gai Felix Leo, president of the Top Cats. You may call me Felix for short.” Felix spoke slowly and carefully, in precise English, for Lou.

“Apparently,” he went on, “you stumbled onto our turf when the Peelers were chasing you a little while ago. We are now discussing whether we should give you back to the Peelers or deal with you ourselves.”

“Deal with me?”

“Kill ya,” snapped a tall, lanky youth.

Felix shook his head and grasped the edges of the desk in his massive hands. “Zonk, whyn’t you keep shut?” he said to the one who had spoken. He turned back to Lou. “You can’t stay here. You can’t join our gang for obvious reasons. If we let you go free, the Peelers would take it as an unfriendly gesture and they might start a war with us.”

“Them whitesheets,” Zonk muttered.

“My friends don’t like to admit it,” Felix said, his voice rising, “but we are in no shape for a war against the Peelers. They outnumber us and they can call in half

a dozen other gangs as their allies."

"An' we can get all uptown to come on our side," Zonk shouted.

"Yeah, an' turn the whole city into a battleground?" Felix countered. "Been enough o' that, you fool. We gotta work out somethin' better—least till we're strong enough to stand up to the Peelers."

"Look," said Lou, "all I want is to get to the jetport before the police block it off."

"Police?" Zonk flashed. "Helmets? After you?"

"Federal marshals—and some world government people."

They stared at him blankly. None of them had the vaguest idea of what he was talking about.

Except Felix. "Why are they after you?"

"They won't tell me."

Zonk laughed. "Since when the helmets tell you why they crack-in' your skull? They jus' *do* it, tha'sall. You find out later in the hospital—if you make it that far."

"If I don't get to the jetport before dawn they'll probably be waiting for me there," Lou said.

Felix shook his head again. "You're not getting to JFK either before dawn or after it. We can't let you go, the Peelers would get sore at us."

"You're a kneeler," Zonk yelled. "Chicken, scared o' them damn Peelers."

Felix's face went unimaginably hard. His eyes slitted like a cat's.

He rose from his chair and stepped out from behind the desk on legs the size of tree trunks. Zonk backed away.

"We been friends," Felix said as he advanced like a tide engulfing the room. His voice was low, menacing. "So I'm gonna give you one chance to eat that mouth. Now."

Zonk said, "I—got sore—"

"Am I a kneeler?" Felix was towering over the lean youth—he seemed to surround Zonk.

"No— no, you ain't."

"Am I afraid of anyone or anything on this earth?"

"No. Nothin' or nobody."

Lou said, "Then you're not afraid of helping me get to JFK."

Everybody froze. The room became absolutely silent. Felix turned toward Lou. The grimy floorboards squeaked under him. His face was still as flat and hard as the face of the lion in the poster.

"What did you say?"

"You heard it."

Felix stared at Lou for a long moment. Then he chuckled. Finally he laughed. The sound shook the room.

"You're something, white man—really something, calling me out like that." Felix went back to the desk. "You got guts. Not much brains, maybe, but some guts." He dropped back on the chair so hard that Lou felt sure it would crack under him. "If I don't take you to JFK it won't be because I'm afraid. Is that it?"

Lou grinned. "That's what I said."

Felix laughed again. He waved a heavy hand. "Man, you must have some black blood in you someplace. You got guts, all right. Look—if I let you go, you'll be dead before daybreak. If I keep you—or help you—I'll start a war. But maybe you're worth giving a hand to—I'll tell you about it." He turned to Zonk. "Go get us a car."

"You gonna—"

"Man wants t'see JFK," Felix said. "I ain't seen the place myself for years. You ever see it?"

Zonk, wide-eyed, shook his head.

"You ready to fight a war when we get back?"

Zonk nodded. So did the others.

"Okay, get a car. Maybe we'll stop uptown on our way back, bring reinforcements. Show the Peelers they gotta think twice 'fore they start a war."

"Now you're talkin'," Zonk said and headed for the door.

THE vehicle was an ancient two-door, crumbling with rust, dented, upholstery ripped, automatic guidance long wrecked, lights defective, radio gone. But it ran.

Felix was jammed in behind the wheel. He laughed softly. "Man, some people sure are lucky. You got guts all right, but better than that, you got luck."

Lou looked at him. Somehow, in

this flat cold gray of early morning, Felix seemed different.

"Still haven't figured it out, have you?" Felix asked him.

"Right. I don't understand."

The big man squirmed around in the too-small bucket seat and glanced over his shoulder at Zonk, who was sound asleep.

Then he said to Lou, "You think you just talked your way out of being killed by a teen pack? Just like that? Never wondered why the Top Cats are led by a guy my age? I'm over thirty, you know." He dug into a pocket, handed Lou a card.

Lou glanced at it in the dim panel light. He read: Office of Rehabilitation—before Felix took back the card.

"All you need to know," Felix said. "We're here, trying to save what we can, and as many young people as we can. My gang knows me—we sort of trade. I give them leadership against the other gangs and once in a while they try out my ideas for straightening them out—I try to bring them around to acting as humans—slowly." He jerked a thumb back toward the city. "My life's there. Don't get me wrong—I work *with* these guys and you're lucky to be alive. If you hadn't said what you said—you wouldn't be. But I've got to teach my guys there are values other than sex and wars. You gave me a chance. I figure it'll take another ten-twelve

—

years before the gangs start acting as civilized as Stone Age tribes."

"Do they understand why you're helping me?"

"Right now they understand that I'm not afraid of the Peelers. They knew it—but confirmation never hurts," Felix said. "As to why I'm bringing you here?" He shrugged. "It'll come to them. Maybe some suspect even now."

"What happens if they decide you're working against them in saving my life?"

"I've seen what's happened to others like me—outsiders. It isn't pretty."

VI

THE towers and hangars of JFK rose in the pre-dawn glow. Off the road, Lou also saw the lights of an automated shopping center.

He said softly to Felix, "There's your reason for bringing me here—" and pointed.

Felix grinned, swung the car to an off-ramp, pulled into the automated shopping center.

The main doors to the shoppers' mall remained locked until Lou told his credit number to the tiny receiver beside the door and let the camera just above it take his picture.

"This credit number is from Albuquerque, New Mexico," the shopping center computer said impassively. "It will require several

minutes to check it through."

Felix said, "We'll wait."

Lou wondered if a general alarm had been sent out for him—if so, his credit number and picture would have been pulled out of the file. And he might be broadcasting his whereabouts.

"Sorry to keep you waiting," the computer said. "Your credit check is complete. You may enter the center and purchase whatever you wish up to a limit of ten thousand dollars."

Felix beamed. "Just what I've always wanted—a man with a good credit rating."

The mall and shops were deserted as Lou, Felix and Zonk went through. Lou limped to a drug-store and had his foot treated. Felix and Zonk headed straight for the clothing shops. In a half hour Lou had showered, shaved and dressed in a disposable summer suit. Felix went in for grander tastes, complete with cape and boots. Zonk leaned toward electric colors and the latest, form-fitted, sprayed-on styles.

Lou said, "Take some loot back to the gang." He looked straight at Felix. "That's what you two came here for."

Zonk's tough face showed surprise—he stared hard at Lou, glanced at Felix and went to work, pulling clothing from the racks.

FELIX drove through the main streets of JFK just as the sun

showed itself over the distant skyline. The white-helmeted security guards at the gates eyed the battered old car but let it pass. The sweeping ramp to the once-grand terminal building was potholed, the building in decay.

The car stopped in front of the terminal and Lou stepped out.

Felix patted the boxes in the back seat. He said, "Next time we catch a white man we know where to take him—right, Zonk?"

He waved at Lou and drove off.

The first flight that connected with Albuquerque was at seven and proved uneventful. No one stopped or even noticed Lou as he went to the flight departure lounge, verified his ticket on the jet, went aboard and took his seat. No alarm seemed to be out for him.

He fell asleep when the plane was airborne and awoke with a start when the flaps and wheels went down again. Through the window he could see the familiar flat greenery of the New Mexico irrigated farmlands. In the distance Sandia peak stuck its rocky brown mass into the sky. Instantly he thought of Bonnie.

I wonder if she's home. Maybe she never left for Charleston. Another thought hit him. What if they're waiting for me when I get off the plane?

The plane landed and taxied up to the terminal. Lou tried to look invisible in the crowd, bolted for

the nearest exit. Outside in the blazing sunlight he wondered if his car was still in the parking lot. Better leave it alone. He waved a cab and told the autodrivers, "Genetics Institute."

Bonnie would be at the lab if she hadn't been picked up by the police.

The cab moved into the farmlands, following one of the main irrigation lines. For the thousandth time, Lou tried to puzzle out why the authorities wanted him. The Federal marshal had said he was under arrest. The Norseman at the UN building had said he wasn't. But they were going to take him to Mes-sina. Why?

Finally Lou could see the familiar white buildings of the Institute. Something was wrong. The place looked deserted. The parking lot was empty. Nobody was walking around outside. Nobody was visible in the big glass-fronted lobby. And as the cab pulled up to the outer fence, the gate did not slide open automatically.

Lou glanced at his wristwatch—nine-thirty, Albuquerque time.

Why is it—wait a minute. What day is it? Sunday or Monday? I took off—it must be Sunday, got to be. . .

He thumbed down the window button and felt the heat of the outdoors invade the cab. To the gate control box he said, "Code one-five, Christopher. Open up."

The gate rattled open. The cab moved smoothly to the lobby door. Just to be safe, Lou gave a phony name and credit number to the cab's simple-minded computer. It had no camera equipment and therefore no way to check on who its passenger really was.

THE cab left. Lou stood squinting in the brilliant sunshine. A flash of fear knifed through him. Even for a Sunday the Institute seemed utterly deserted.

The main doors into the lobby were locked but Lou's name and code symbol were enough to open them. He stepped into the cool darkness of the lobby; the sun's glare was screened out by the polarized windows. He hesitated, then walked the building's main corridor. His footsteps against the plastic flooring and the whisper of the air conditioning were the only sounds he could hear.

First thing to do is call Bonnie, find out if she's okay. . .

His office was at the end of the corridor, next to Ramo, the big computer. Suddenly Lou realized: *Not even Ramo's making any noise. . .* Usually the computer was humming and chattering—it was almost always working on something, even on weekends and late at night.

Lou looked through the glass partition that surrounded Ramo. The computer was silent. No

light flashed on its main board.

"Ramo, you awake?"

From the speaker in the ceiling came a warm baritone voice. "Yes, Lou. I'm fine. What can I do for you?" A single row of lights flickered to life on the main board.

Lou breathed a relieved sigh. "You were so quiet. I thought somebody had shut you down."

"All programs are completed at present," Ramo answered.

"All programs? What about the zygote modeling calculations? You still have a month's work on them."

"That program was temporarily shut down by Dr. Kaufman."

"Shut down? Why?"

"I don't know."

Lou stood watching the flickering lights. Something like panic was forming in the pit of his stomach. He fought it down.

"Okay—uh, get Bonnie Sterne on the phone for me, will you? Her home phone."

"Shall I place the call on your office phone?" Ramo asked.

"No. I'll be in the cafeteria. Anybody been in today?"

"No one. Except for Big George, of course."

Shaking his head in puzzlement, Lou returned to the main corridor. He stepped into the cafeteria and saw Big George sitting at a table eating a huge plate of fruit salad.

Big George was an eight-year-old mountain gorilla, taller than

Lou even in his hunched-over, ground-knuckling posture. No one had weighed him for several months, not since he had playfully ripped the big scales out of the wall of his special quarters. His face was all ferocity—fanged mouth, low beetling brow, black muzzle and blacker hair. His arms dwarfed the table he sat at. The plastic chair was sagging dangerously under his weight. It was hard to believe that Big George was a gentle, even a timid animal.

"Who let you in here?" Lou asked from the doorway.

"Let myself in, Uncle Lou," George whispered. "Got hungry. Nobody here to feed me. Opened the pen gate and came for food."

Lou went over to the selector wall and punched buttons for a steak dinner. "You mean nobody's been around to feed you since yesterday?"

"Nobody, Uncle Lou." George stuffed half a cantaloupe into his toothy mouth. Big George was one of the Institute's great successes. Geneticists had managed to give the gorilla a large measure of intelligence. George tested out to the intelligence level of a human six-year-old. It seemed he would go no further. The Institute's surgical team had altered George's vocal equipment so that he could speak in a harsh, labored whisper.

Lou carried his steaming tray to the end of George's table. He was glad of some companionship but

it was best to give George plenty of room. George was sloppy.

Looking up at the ceiling, Lou called, "Hey, where's that phone call, Ramo?"

"There is no answer," came the smooth reply.

"She's not home?"

"Evidently not," said Ramo.

"What's her phone say?"

"Nothing. No reply whatever. No forwarding number, no request to leave a message."

Lou stared at his steak. Suddenly he had lost his appetite.

Got to think—took off Sunday morning, didn't I? Or was it Saturday? So confusing—the whole night in New York. That was just last night. . .or was it?

"Ramo, what day is it?"

"Monday, July seventh."

"Then where is everybody?"

"All of the scientific staff has been taken into custody by Federal marshals," Ramo said calmly. "Everyone else has been sent home."

Before the words could register on Lou's mind George growled, "Somebody coming in the hallway, Uncle Lou. Strangers."

"Federal marshals," Ramo said. "I was programed to call them when you returned to the Institute."

VII

LOU stood up. "Federal marshals? How many?"

"Twelve. They have locked all doors and are searching the building for you," Ramo said without emotion.

"Uncle Lou, I'm afraid," George whispered. He pushed up from his chair and shambled over to stand beside Lou, so close that Lou could feel the warmth from the great hairy body.

"Is the door to the courtyard locked?"

"Yes," Ramo answered. "All the doors are."

Footsteps sounded in the hall. Lou turned to George.

"Can you knock that door open, Georgy?"

"I can try, Uncle Lou."

Lou patted a massive shoulder. "Come on."

George scampered toward the door, accidentally knocking a chair out of his way. A yell came from the hall.

"Hey—hear that? In here, quick, unlock it."

George was loping across the floor in full stride now, knuckles and big splayed feet slapping the tiles. Lou had to run to keep up with him. George didn't stop or even slow down at the door. He simply crashed right through, his bulk and speed tearing the lock apart and knocking both doors off their hinges with shrieks of ripping metal.

Lou was right behind him in the sudden glare of sunshine.

"George—this way."

He took the lead through the courtyard and the access tunnel toward the back lot. Stopping, he pointed to the stand of trees behind the parking area.

"You get back to your pen." He pointed. "Safest place for you. They won't bother you there."

"But Uncle Lou, I want to go with you," George argued hoarsely. "All the nice people went away. These new people scare me."

Lou took a deep breath and said, "They won't hurt you if you stay in the pen. You can't come with me right now. But I'll come back for you."

"When?"

Lou could hear shouts out in the courtyard.

"As soon as I can, George."

"Promise?"

"I promise. Now get back to your pen and be a good boy. And don't be afraid. They won't hurt you."

With a troubled look the gorilla moved toward the trees.

Lou sprinted for the parked cars. The lab's electric wagons were lined up in the first row. Their ignition locks were keyed to a simple voice code. He slid in behind the wheel of the first one in line.

"DNA-RNA," he said as he pressed the starter switch.

The electric motor hummed to life. A man in a gray business suit ran out to the parking lot. He held a gun. Lou grabbed the steering wheel, kicked off the brakes and

slammed the accelerator to the floor. The wagon lurched feebly, then started to gain momentum. Lou drove straight at the man, who jumped aside and fired. Lou swung the wagon, cut back for the access tunnel, dived through its shadow, raced through the courtyard and another handful of jumping, shouting men, into the front tunnel and out past the main lobby.

The front gate was rolling shut, but Lou knifed the wagon through it and sped down the highway in the curiously quiet acceleration of the electric motor.

He picked up the car radio microphone and called:

"Ramo, this is Lou Christopher. Over."

"I recognize your voice pattern, Lou. Over."

"Basic program zero, Ramo. Suspend all housekeeping functions until further notice. Maintenance and repair mode only. Execute. Over."

"Executed. Over."

Lou grinned as he raced down the highway, one hand on the wheel. "Very good, Ramo. Now suspend all communications until my voice pattern orders resumption. Understood? Over."

"Understood and prepared to execute," Ramo said tonelessly. But somehow Lou felt the computer didn't like to shut itself off.

"Execute. Over."

No answer. The computer was completely shut down. All the

doors that were locked would remain locked until some of the Institute maintenance men could be brought to open them manually. The front gate would stay locked, too, and it was strong enough to keep the police cars inside even if they tried ramming it. All the lights, the air conditioning, everything, was off.

Have a pleasant day, all . . .

He eased off the accelerator and coasted down the highway at the legal maximum speed. No sense in being picked up by a traffic patrol. His insides were fluttering, now that he had a little time to think.

How long can I keep running? Where to now? Not my apartment. Ramo said everybody on the scientific staff was arrested. Did they take Bonnie, too? And why, why, for God's sake? What's going on?

He shook his head. He felt as helpless as in a nightmare. Reality seemed far away. Authorities didn't just march into a lab and arrest everybody. Not today. Summary arrests belonged to the dark ages. People had rights, were protected by laws.

And then he remembered New York and realized that in some places the dark ages still existed.

AS HE drove toward town he switched on the radio and dialed police frequency. Plenty of chatter,

but nothing about the Institute or himself.

Why not? Why aren't they calling for help? Or at least spreading an alert to pick me up?

As if in answer he saw a highway patrol cruiser gliding behind him in the outside lane. He knew the electric wagon could never outspeed a cruiser; the turbine-driven police car could lift itself off the ground and literally fly on an air cushion for short distances, doing several hundred knots. But the cruiser zipped right past him. The two white-helmeted officers with in it never even looked at him.

He drove the wagon halfway across town, parked it in a public garage, took an auto cab back to Bonnie's. He gave the cab another false name and credit number.

In the lobby of the apartment building he told the door computer, "I'm a friend of Miss Sterne's, apartment twenty-seven T."

"Name, please," the computer's flat voice replied.

"Roy Kendall," Lou lied, naming a mutual friend who lived in Denver.

"Miss Sterne is not in at present. I am not programmed to admit anyone."

"Miss Sterne has left special instructions under code V for visitors."

The computer hummed to itself for a second. Then, "Mr. Ken-

dall, you may be admitted." The door clicked open. Lou stepped through and went to the elevator.

He had to go through the same routine with the lock computer at Bonnie's door, but here the code symbol was SF for special friends. Finally the door popped open and Lou stepped into Bonnie's apartment.

Shutting the door carefully behind him, he looked over the single room. Nothing seemed disturbed or moved. The closet next to the foldaway bed was open and some clothes were draped on a chair before it. Lou poked into the kitchen alcove and found a pot of coffee still plugged in and warm.

Bonnie was here this morning. Or at least, somebody was . . .

He took a bottle of milk from the refrigerator and downed half of it. While he was putting it back, the front door opened.

Bonnie stood in the doorway, open-mouthed with surprise.

"Lou!"

She ran to him, threw herself into his arms. She felt warm and soft and safe.

"Baby, is it ever good to see you," he murmured into her ear. "You even *smell* great."

"Lou, what happened to you? Where've you been? We heard—oh, Lou, your face!" She reached up and touched his swollen jaw. Her fingers hurt but Lou didn't mind at all.

"It's a long story," he said, still

holding her tightly. "For a while, there, I didn't think I'd ever see you again."

He kissed her and she gently pulled away. For the first time, Lou noticed that her face looked tired, strained.

"What's been going on?" he asked. "Why has the Institute been closed? Ramo said—"

"You've been at the Institute?" She looked startled.

Lou nodded. "Yep. Nearly got caught by a squad of guys who claimed to be Federal marshals."

"They were marshals," Bonnie said.

"But what's this all about?"

Bonnie walked to the sofa under the windows on the other side of the room. Lou followed her. She sat down.

She told him, "The first hint I had about trouble came yesterday, right after you took off. A Federal marshal stopped me at the jetport. I was on my way to meet you when you landed in Charleston. He wouldn't let me on the jet. I had to go to the Federal courthouse. Practically everybody in the Institute was there."

Lou sank down to the sofa.

"Any explanations?"

She shook her head.

"They let some of us out after a few hours. But we were told not to go back to the Institute. That it had been closed down."

"Closed?"

"Permanently, they said. I had

to report to the employment center this morning. That's where I've been all day. Lou, what are they doing?" Her voice was starting to rise, her tiny fists were clenched. "Why did they close the Institute? What is it? What?"

He took her by the shoulders. "Hey, ease off. You're okay. That's what counts. And nobody's going to hurt you. That's a promise."

"But they had rounded up everybody—Dr. Kaufman, Greg Bel-sen, and just about all the scientists. All the technicians, all the secretaries and clerks—everybody. And nobody seemed to know anything. Any reason why. They were just following orders." She reached out and touched his jaw again. "But what happened to you? I heard one of the marshals say in the courthouse that you had been arrested in Charleston."

"I got away." Lou told her about his night in New York and this morning's visit to the deserted Institute.

"What are you going to do now?" Bonnie asked.

"I don't know," he admitted. "I'm about ready to cave in. Only had a couple of hours' sleep on the jet—"

Bonnie stood up. "I'll fix you some lunch and then you can take a nap."

She went to the kitchen alcove and started touching buttons on

the control keyboard. Lou slouched on the sofa, already half asleep.

"Lou—it's like the world's coming apart, isn't it?"

He looked at her. "Whatever it is, it's bigger than the Institute. They had Kirby from Columbia at the UN building. They were going to take us to Messina."

"The world capital?"

Lou nodded. "I guess the world government's behind this. They have the Federal people here on their side. And nobody's talking."

Bonnie took a pair of steaming trays from the cooker and placed them on the low table next to the sofa. She sat on the floor, next to Lou's feet.

"Lou—if the world government is after you there's no place for you to hide."

"Maybe," he muttered, leaning over the trays and picking up a fork.

Bonnie said, very softly, "Maybe the only thing you can do is give yourself up. After all, if the world government wants you the reason must be terribly important, whatever it is."

"But why yank us in like criminals? They're sure not giving us any chance to exercise our constitutional rights."

Bonnie didn't answer.

They ate in silence. Afterward Lou stretched out on the sofa for a nap. He dreamed of being chased through the streets of New York by

ragged gangs and uniformed policemen. Somehow the streets became Messina but the gangs still pursued him. And from a balcony above him Felix leaned heavily on a frail railing, huge and black, booming laughter at the chase.

He woke up shouting. Bonnie was beside him, her hands on him, stroking him. He sat up.

"They—I—"

She said soothingly, "You were dreaming. Look, you're in a cold sweat."

Lou ran a hand over his eyes.

"Bonnie—"

She looked away from him and said, "Lou, while you were sleeping I was thinking hard about this whole thing. You can't run away forever. You were lucky to get away last night without being killed. Sooner or later either they'll catch you or you'll be hurt. Badly."

"I guess so. But what else?"

Bonnie's hands were white-knuckled and clenched. Her face was bleak.

"Lou," she said, "I don't want you hurt. I . . . while you were asleep I called the courthouse. There are four marshals outside in the hall. They've come for you."

"You *what*?" Lou sprang from the sofa.

"There's no other way out of here," she said. Tears were in her eyes. "Please, Lou—let them take you in. They promised you wouldn't be hurt. Please—"

Lou stared at her. "Federal mar-

shals, the world government, the Institute closed—and now even you, even you, Bonnie. Nobody is on my side. Nobody. In the whole world."

"Lou, please—" She was crying now.

The door opened and they walked in. Four of them. Big-shouldered, tight-lipped. Wearing plain dark business shorts and tunics. Armed, evcrybody knew, with needle guns and more.

"Louis Christopher. I have a Federal warrant for your arrest."

"Nobody in the whole stupid world," Lou muttered loudly enough for only Bonnie to hear.

VIII

IN A way he was glad that his running was over. He remembered a time when he had had an inflamed appendix but hadn't known it. For weeks he had nursed the sullen pain in his abdomen, had worried over it but had told no one, until he nearly collapsed at the Institute and some of the other computer engineers physically dragged him to the clinic. From then on he had stopped worrying. The doctors had made the decisions and had done his worrying for him.

Now, surrounded by Federal marshals, Lou sat in the back of a car, knowing that his decisions had no relevance. He was far from happy but for the time being. He

was as helpless to change his situation as he had been in the hospital.

They drove to the airport, past the terminal building, toward a sleek white twin-engine executive jet parked well away from all the hangars and commercial planes. The sky-blue insignia of the world government was painted on its tail. Standing beside the plane, next to the open hatch, was the Norseman who had been at the UN building.

He looked Lou over carefully as Federal marshals brought him to the plane.

"I see you made it to New York and then some," said the Norseman. "Congratulations. We were afraid you'd be killed."

Lou said nothing.

"Please, Mr. Christopher, my job is to bring you safely to Messina. No more adventures, eh? We'll only have to pick you up again."

He gestured toward the hatch. Lou climbed into the plane. The Norseman followed him, locked the hatch shut, went forward into the control compartment. The jet was luxuriously furnished with deep swivel seats at the four forward windows. Behind them were a couch and a full-sized desk, complete with viewphones.

The Norseman returned from the control compatment.

"Pick any chair you like. This flight is exclusively for you."

Within minutes they were air-

borne and streaking supersonically across the country. They landed briefly at New Washington for fuel, then headed across the Atlantic, the setting sun at their back. Lou slept as the plane sped into the gathering night.

THE Norseman woke him when they were ready to land. The night outside was black and moonless—the only lights below them outlined a landing strip. On the ground, Lou was taken to a waiting car and driven from the airfield. The Norseman sat silently beside him while two swarthy men spoke Italian to each other in the front seat. The car's headlights gave Lou an impression of hills and farmlands and wind-tossed trees swaying in the darkness. The night air was warm and had that special softness that comes from the nearness of sea.

Before long he saw a gateway flanked by two live guards. After a few more minutes the car pulled into a driveway that rose toward an ornately decorated entrance. Antique lanterns slowed under a lofty awning.

In the darkness the building gave the impression of rambling hugely.

The Norseman stepped out first. He held the car door open until Lou was also out. A loud monotone sighing came to them from a distance—the sea rolling and retreating on a beach.

"This will be your home for the time being," the Norseman said. "I believe you'll find many of your friends inside."

Lou walked to the door, which opened at his touch. When he looked back, saw the Norseman was smiling and nodding at him.

"Your job's done now, is that it?"

"Yes," he answered. "You were the last one on the list."

What list? Lou wanted to ask but he knew he would have no answer. He stepped into the entryway of the villa and the door swung shut behind him. He guessed it would lock automatically. He didn't bother to test it.

He stood alone in a wide, long hall. At the far end a melodramatic staircase made a curve to the next floor. The doors on each side of the hall were heavy—and made of real wood. The walls were lined with paintings. Portraits, mostly. Old and original. A stately grandfather's clock chimed once at the foot of the stairs. It was morning.

Lou walked slowly, his footsteps echoing on the intricate geometry of the parquetry floor. No other sound—no, wait. Voices, muted, from behind a door. He walked over and opened it.

Seven men were sitting around a table in the middle of the room. Books lined the walls. A pair of French doors stood open at the far end of the room. Their filmy cur-

tains billowed softly in the breeze from the sea. The room was lit dimly. Most of the men at the table had their backs to the door and to Lou. One of them looked up.

"Lou. They dragged you in finally."

The speaker was Greg Belsen, one of the bright, aggressive, young biochemists from the Institute.

The others turned to face him. All were from the Institute: Ron Kurtz, Charles Sutherland, Jesse Maggio, Bob Richardson. And at the head of the table sat Dr. Adrian Kaufman, director of the Institute. Dr. Kaufman was a handsome, vigorous man, with strong leonine features topped by thick gray hair. Right now he looked weary and unsure of himself.

"Christopher," said Dr. Kaufman, frowning slightly. "What on earth are you doing here?"

Lou laughed. "It wasn't my idea to come, believe me." He walked to the table. There were no more chairs in the room, so he remained standing.

"Why did they bring you?" Dr. Kurtz asked. He was about Lou's age but his bushy brown beard made him seem older. "So far the only people here are the scientists."

By scientists, Lou understood, Kurtz meant geneticists and biochemists.

"That's right," Dr. Maggio agreed. "Only the technical staff has been brought here. They let the secretaries and others go free."

"I am on the technical staff," Lou reminded them.

"But as a computer engineer, not a geneticist," said Dr. Kurtz.

"Or biochemist," added Dr. Richardson, a biochemist.

"Maybe the people who arrested us don't know the difference between computer engineers and geneticists," Lou said, recognizing the anger that simmered inside him. "Maybe they had orders to bring in the whole technical staff. They sure didn't stop and ask to see my diploma."

"Well," Greg Belsen said, "there goes the neighborhood. If they start letting computer people in, God knows what'll happen next."

THE others laughed. Lou realized that Greg was trying to smooth over the rift between the scientists and himself. The caste system fostered old wounds. Under ordinary circumstances at the Institute, caste hardly ever became noticeable. But here, in this strange place, it surfaced immediately. And it hurt.

Dr. Richardson changed the subject. "Does anyone have any idea why we're here?"

"You used the word 'arrested,'" Dr. Kaufman said to Lou. "As far as I know, no one has arrested us. We've been brought here

against our will, true enough. But no one has charged us with a crime."

"More like being kidnaped."

"I was arrested by Federal marshals," Lou said. "No charges—but they were ready to shoot if I tried to get away. And the Institute's been closed permanently, I found out."

"Permanently?" The word went around the table like a shock wave.

"I don't get it," Dr. Maggio said, frowning. "Who's doing this? And why?"

"Obviously we've attracted attention from the world government," Richardson said.

"But why?"

"Because they're frightened out of their wits over genetic engineering. They're afraid of what might happen when we succeed."

"I don't believe that."

"No? Take a look around you."

Greg Belsen said, "The real question is, what are we going to do about it?"

"What can we do?"

Looking down at the polished table top, Dr. Kurtz mumbled in his beard, "Try to get out. Escape."

"How?" Sutherland asked. "Where to?"

Lou said, "They chased me across the country and back. The world government may be doing this but they had plenty of Federal marshals helping them."

Dr. Kaufman folded his hands

over his midsection. "We're several thousand miles from home, on an island where we'd be very quickly spotted as strangers. Even if we escaped from this villa we wouldn't go very far."

Lou had a sudden thought. "Maybe we don't have to go far. Just to some newsmen. Whoever's behind this is trying to keep it quiet. They didn't even notify the local police when they were chasing me. And I didn't hear a word about the Institute's closing on any newscasts."

With a sarcastic grin, Sutherland answered, "So you volunteer to go over the wall and find us a newsman. And he'll tell the world we've been kidnaped or something."

"Something like that," Lou snapped.

"So what?" Sutherland replied. "Suppose the newsman believes you. Even suppose, he manages to broadcast the story and the world government officials say that he's wrong, he's sensation-mongering. They say that we're a small group of scientists who've been brought here for a special project. End of story. The world doesn't care about twenty-five scientists. We're not news. We're not important people—like Tri-V stars or soccer players."

"Now wait, Charles," Dr. Kaufman said, his eyes brightening. "Christopher may have something. After all, they *have* tried to

do this quickly and quietly. Maybe some publicity would break up this whole affair."

Sutherland made a sour face. "Look at it objectively. We're just a handful of scientists—"

"Oh," Lou remembered. "They took Dr. Kirby too."

"Kirby? From Columbia?"

"They had him in New York but were bringing him here."

"But he's not in this villa."

Sutherland waved a finger at them. "You see? There's more to it than just us. I thought so. We're only a part of a bigger picture. And the world government is behind whatever this is. Publicity isn't going to hurt them. Either they'll clamp down on any news about us or they've already figured out what to tell the newsmen."

"Then what can we do?" Kaufman demanded.

"Nothing at all." Sutherland shrugged. "We wait and see what happens."

Dr. Richardson suddenly asked, "Say, what about Big George? Is he—"

"I saw him this morning—yesterday, that is," Lou said. "He was scared, but I guess somebody's taking care of him. I hope."

"They can't stick him in a zoo." Greg said. "He'll die of loneliness."

"Or fright."

"Maybe we can ask—"

The door from the hall opened and Lou turned to see Mrs. Kauf-

man standing there, her portly frame tightly wrapped in a night-robe.

"I finally got the children to sleep," she said to her husband. "Are you coming up soon?"

With a sigh, Dr. Kaufman answered, "In a few minutes, dear."

She nodded and shut the door. Lou stood open-mouthed.

Greg said, "Didn't you know? The wives and children were brought here too. For every married member of the staff it's a family affair."

IX

GREG let Lou bunk with him in a spacious bedroom on the top floor of the villa. They left the air-conditioning off and the balcony doors open. The murmur of the surf quickly lulled them to sleep.

The morning was bright and cloudless. Lou found some clothes in the bedroom closet that fit him: a gaudy disposable shirt and a pair of shorts.

"There's a Sicilian house staff that will bring you more clothes. All you have to do is ask," Greg told him as they went downstairs. "And, man, can they cook! We may not know why we're here—but they're sure treating us right."

The morning was spent exchanging rumors. They were being drafted by the world government for some ultra-secret project. No, a war was brewing between the

United States and China and the world government was pulling out the top scientists on both sides to save them from being killed. Nonsense, war is impossible with all nations disarmed; the world government wouldn't allow a war to break out. The *real* story is that there's an epidemic of unknown origin at the Mars base and we're going to be sent there to find a cure before it wipes out everybody on Mars. Nuts! My brother-in-law's at Mars base and I just got a lasergram from him last week.

The rumors and speculations spiraled hotter and wilder as the sun climbed through the morning sky. But nobody mentioned the simplest explanations: that the government had decided to prevent the work on genetic engineering from being completed. That thought was too close to home, too plainly possible and painful to be mentioned.

Shortly before noon Lou was prowling the patio that faced the sea. Several of the older men and their wives were sunning themselves. Lou found himself unable to sit still. There had to be something he could do—*something*.

Greg came trotting up the stone stairway from the beach below.

"There you are," he said to Lou. "Listen, I've been exploring. At the foot of this picturesque cliff is a picturesque shore. Some of the younger wives and older daugh-

ters have found some picturesque swimsuits. Beautiful scenery. Including the boss' oldest daughter. How about it?"

The memory of Bonnie stabbed into Lou's mind. "No, thanks. I don't feel like it."

Greg shrugged. "Okay, suit yourself. I'll be down there chasing—uh—the waves. If anybody's looking for me."

"Sure." Lou turned and resumed his patio prowling. He found himself thinking of Bonnie.

I ought to try to get in touch with her. Tell her I'm not sore at her . . .

He went indoors to look for one of the housekeeping staff. Instead he found Kaufman and Sutherland.

"Have you seen Greg Belsen?" Kaufman asked. "We've just been told of a meeting at which we're to be given an explanations. They want three of us to hear matters at first hand. Where is Greg?"

Lou was about to answer when he remembered that Kaufman's daughter was on the beach. "Greg's—uh—he was here a while ago. I don't know where he is now."

Sutherland made a sour face. "The car's right outside, they want us now."

"I'll go," Lou heard himself say.

"You?"

"I'll sit in for Greg."

"But—"

"Unless you want to look around for somebody else."

Kaufman glanced unhappily at Sutherland, who was eyeing Lou's vivid shirt and shorts. The two older men were in more conservative sports clothes.

"I could change in two minutes," Lou offered.

"No time to change," Kaufman said. "The car's waiting for us. Come on."

Lou followed them to the car. Two men sat in the front seat, both wearing brown uniforms without markings of any kind. Both were dark, swarthy. And they said nothing.

Sutherland frowned in the back seat, as the car pulled away from the villa. "What do you think we'll be told?"

Dr. Kaufman shook his head. "Whatever it is, it will probably be more fantastic than any of the rumors going around."

THE drive took them an hour along a winding dusty road among hills. Now and then the car topped a rise. A view of the sea stretched away on one side, rich fields of olives and citrus groves on the other.

Thick clouds began to pile up. By the time the car entered the gates of another old villa, passing uniformed guards at attention, the darkness overhead was grumbling with thunder and flickering with lightning. The early afternoon was as dark as evening.

Dozens of cars were parked

before the villa's main entrance. And inside, the old house was filled with men and women, milling around aimlessly, buzzing with conversation.

Lou, Kaufman and Sutherland paused inside the front entrance, gaping at the unexpected crowd.

"That's Margolin, from the Paris Academy," Dr. Kaufman said. "What's he doing here?"

"And Liu from Tokyo," Sutherland added.

"Look — Rosenweig — and there's Yossarian."

"My God, all the top people in the field are here."

Lou recognized some of the best-known geneticists and biochemists in the world. He saw no other computer engineers.

"Adrian," called a frail little man with wispy white hair. "I knew they would bring you here, too."

Kaufman turned and recognized the old man. At once shocked and delighted, he went to him, hands outstretched. "Max — they brought you in on this?"

Lou recognized Professor DeVreis, the elder statesmen of the world's geneticists, the man who had taught the leaders of the field, like Kaufman, in their university days.

Dr. Sutherland joined them. Soon the three formed the nucleus of a growing, grave-faced, head-shaking crowd. Lou stood alone.

"Do you know any of these people?"

Lou looked up. A tall, gangly, lantern-jawed man his own age was standing beside him. The other wore a baggy suit with full-length trousers and the kind of shoes that you only found in northern hemisphere cities. He was trying hard to look calm and unfrightened.

"I don't know many of them personally," Lou answered. But he pointed out several of the scientists.

His new companion shook his head worriedly. "Geneticists? Biochemists? Why am I here? I'm a nuclear physicist." He spoke with an accent Lou was unable to pin down.

Lou felt equally puzzled. "If it's any consolation, I'm a computer engineer. Um—my name's Lou Christopher."

Lou's offered handshake was accepted. "I am Anton Kori. From the University of Prague."

"And I'm with the Watson Institute of Genetics—or was, that is."

"American?"

Lou nodded. He saw that many of the people in the crowd had drinks and sandwiches in their hands. "Looks like refreshments are being served somewhere around here. Hungry?"

Kori nodded. "Now that you mention it—"

They exchanged stories as they

searched the crowded rooms and finally found the buffet table.

"Nothing like this has happened in Czechoslovakia in thirty years," Kori said, reaching for a sandwich. "Arrested in the middle of the of the night and carried off by the police—it's like stories my grandfather used to tell." Suddenly his face brightened. "Ah, there are two men I know."

Lou followed as Kori rushed toward a pair of older men who stood at the open doors to the garden. They were eating and talking quietly. One of the men was chunky, bald, fair-skinned, dressed in shorts and pullover. The other looked Indian: dark, slim and intense, slightly Oriental. The plain gray business suit he wore simply accentuated his exotic looks.

"Clark! Janda!" Kori called.

"Anton," said the fair man. "What on earth are you doing here? Or for that matter, what are any of us doing here? Do you know?" His accent was unmistakably English.

Kori introduced Lou to Clark Frederick and Ramash Jandarlu, rocket engineers.

"Rocket engineers?" Lou echoed.

They nodded.

"We were working together—by fax and phone, mostly," said Frederick, "on an improved fusion rocket."

"For interstellar ships," Kori said.

"Interstellar—oh, like the probes that were sent out around the turn of the century?"

"Yes, like the probes, only much better," said Jandawarlu in his reedy voice. "Rocket engines that could propel manned vessels, not merely small instrument probes."

"Manned ships to the stars?"

"Yes. It would have been something magnificent."

Clark said to his coworker, "You speak as if it's all over for us."

The Indian spread his hands. "We are here. We are not working. I don't think they will allow us to work."

"But who are they?" Kori demanded.

Lou said, "The world government. For some reason they've rounded up the world's top geneticists and biochemists—and apparently a few rocket people, too."

"But why?"

As if in answer, a voice came from a hidden loudspeaker: "Ladies and gentlemen, if you will kindly assemble in the main salon, we can begin the meeting."

FOR an instant the big room was completely silent. Then everybody started talking and moving at once.

The main salon was not difficult to find. It was at the end of the front hall, a huge room hung with blue-and-gold draperies. Three or-

nate chandeliers were lit and reflected in a dozen floor-to-ceiling mirrors along the walls. The floor was polished wood—for dancing, but rows of folding chairs were arranged across it now. The far end of the room was bare except for a blank viewscreen on the wall, big enough for a public theater.

When everyone was in the room the doors swung shut and clicked, softly.

Lou sat with Kori, Frederick and Janda in one of the rear rows of folding chairs. He saw Kaufman and Sutherland in the front row, next to Professor DeVreis.

The big viewscreen began to brighten and glow softly.

A voice said, "Gentlemen, you will be addressed by the Honorable Vassily Kobryn, Minister of Security."

The image of Kobryn's heavy, serious face took shape on the screen.

"Russian," muttered Kori.

"Gentlemen," Kobryn said slowly, "it is my unhappy duty to explain to you why you have been taken from your work and your homes to this place. Believe me, the Council of Ministers has thought long and hard before beginning this drastic action."

"As you know," Kobryn continued, his face utterly grave, "the government has worked for more than thirty years to make this planet a peaceful, habitable environment. Our efforts have been

made extremely difficult by two factors: nationalism and population growth. We believe, however, that we have been successful. There are no more national armies and no possibility exists of a major war between nations. And world population growth has leveled off in the past ten years. Admittedly, twenty-some billions of people is a much higher figure than anyone would call optimum but we are managing to provide an acceptable environment for this population."

"What about the cities?" someone called out.

"Quiet!"

"Let him get to the point."

Kobryn seemed almost glad of the interruption. He answered, "Yes, the cities. I admit that most of the larger cities of the world are completely savage—uninhabitable by civilized standards. In plain terms, we lost the fight in the giant cities; actually, we started too late. But we have not given up. A considerable portion of our work is being devoted to long-range programs to win the cities back to civilization."

"Why are we here?" a strong voice demanded.

Kobryn said, "I am coming to that. We live in a world that is dangerously crowded. I am not yet ready to say overcrowded, though many feel that we have passed the point of no return, that our population is too large. They feel that

the barbarians of the cities will engulf us all, sooner or later. Even the optimists among us agree that our present population is large enough for us to be constantly on the edge of disaster. If crops fail anywhere in the world, if a major earthquake or storm escapes our control—the repercussions could be tragic for the whole world.

"We have eliminated wars and prevented large-scale starvation. But just barely. We can handle twenty billions of population—but *only if we keep the world-wide society absolutely stable.*"

Kobryn's voice took on a ring of steel at those words. "We must have stability. At any price. All our computer predictions and all our best social planners come to the same conclusion: unless we have stability, this crowded world of ours will crumble into chaos—starvation, disease, war, barbarism. Without stability we will destroy ourselves and poison this planet completely."

For a long, silent moment Kobryn stared at his audience from the viewscreen, letting his words sink in. No one spoke. The quiet was broken only by somebody's cough.

"The price we must pay for stability is progress. You and your work are part of that price."

NOW everyone stirred. A collective sigh went through the big

room—almost a gasp—more worried and afraid than shocked or angry.

Kobryn went on, "Most of you are geneticists and biochemists. You have proven in recent experiments that you can alter the genetic material in a fertilized ovum, so that you can control the physical and mental characteristics of the being that is ultimately born. Professor DeVreis, you yourself told me that within a few years, you could produce a superman."

"Yes," DeVreis agreed in his rickety, aged voice. "A superman—or a zombie, a slave with bulging muscles and just enough intelligence to follow orders."

"Just so," Kobryn said, his face expressionless. "In either case, the result would be a complete shattering of society's stability. We cannot allow this to happen."

"Can't allow—"

"What does he mean?"

"You can't stop knowledge."

"Gentlemen, please," Kobryn raised his voice. "Think a moment. No matter how attractive the picture you have of raising a race of supermen, you must realize that it will never come to pass. Who will be the first superman? How will you select? Don't you understand that twenty billions of people will bury you in their stampede to have their children made into godlings? Or worse still, they might slaughter the first

few supermen you produce in an insane fit of fear and jealousy."

"No, it wouldn't happen that way—"

"We wouldn't let—"

"No matter how you look at it, any large-scale tampering with mankind's genetic heritage will destroy society as we know it. Believe me! We have spent a year and more examining this question. The best computers and social engineers in the world have labored on the problem. Our world needs stability. Genetic engineering is a destabilizing element, a wild card that will destroy society."

"But it will create a better society. A world of supermen."

Kobryn shook his head. "No. It will create chaos. Look at what happened in the last century, when vast groups of people suddenly became aware that they could be free of the social systems that had enslaved them. When the last vestiges of the European empires were removed from Asia and Africa, when the youth and the minorities realized they had political power, what happened? Was there a peaceful march toward a happy society? No, nothing of the sort. There were wars and revolutions, riots and assassinations—it took a century for an equilibrium to be reached. And for most of that time the world population was below five billion.

"Now we have in our grasp this possibility of genetic engineering, the possibility of making our children into godlings or slaves. Do you think the people of the world will stand patiently in line, waiting for you to work your miracle for them? Don't you understand that many would-be tyrants would use your knowledge to produce the zombies Professor DeVreis spoke of? In a world of twenty billion persons we would never recover from such a violent upset to the social order. There would be no new equilibrium—only chaos. Our world would come crashing down in anarchy and rioting. Your laboratories would be destroyed, and you yourselves would be torn to pieces by the mobs."

A few half-hearted protests came from the audience.

Finally Kobryn said grimly, "The government has decided that all research in genetic engineering must be stopped. We brought you here because you are leaders in this work. You and your colleagues—some two thousand scientists, in all—are to be exiled—"

"Exiled!"

"What?"

"But you can't—"

"Permanently exiled, together with your immediate families, aboard an orbital satellite that has been set aside especially for you."

Kaufman was on his feet. "You can't do that. We're citizens and we have constitutional rights."

"The world constitution specifically gives the Legislative Assembly the power to suspend constitutional guarantees in cases of extreme emergency," Kobryn replied. "Last week the Assembly voted and approved your exile. The World Court has reviewed the situation and found that we are acting in a perfectly legal manner."

Kaufman stood tense for a moment, hand up as if there were another point he wanted to make. Then, slowly, he crumpled into his chair.

"NO ONE regrets this drastic action more than the Council of Ministers," Kobryn said to the silent audience. "You men and women represent the world's best scientists. But for the safety and stability of the world's billions, a few thousand must be sacrificed. Your living conditions aboard the satellite, though rather crowded, will be as pleasant and even luxurious as they can be made. We do not wish to harm you. We have tried to find an alternate solution to the problem. There is none. And it is absolutely imperative that your work in genetic engineering is not allowed to affect mankind. We are trying to avert disaster. I hope you understand."

"Filthy liar," Kori muttered.

Frederick stood up and called out, "My name is Clark Frederick. I'm neither a geneticist nor a biochemist, but a rocket engineer. A few of my colleagues also are here. Are we included in this exile? And if so, why?"

Kobryn glanced away, at something or somebody out of camera range. Then he looked down, as if quickly reading something.

"Ah. Dr. Frederick, yes. You and several other scientists and engineers who have been working on interstellar rockets are also included—I regret to say. It was decided that your work—taken in conjunction with that of the geneticists—could also upset the stability of society."

Frederick's face turned red with anger. "How in blazes can rockets to Alpha Centauri or Barnard's star upset the social equilibrium on Earth?"

"Let me explain," said Kobryn. "If the masses of people on Earth believed that starships could transport them to new worlds, new planets of other stars, millions would seek out this new frontier. As you know full well, only a pitiful handful could ever hope to travel in a starship. The project is much too expensive—and elaborate—to lead to true colonization—"

"Of course. Everyone knows that," Frederick interrupted.

"No, not everyone. Some selec-

tive process would have to be adopted—not everyone on Earth could adapt to life on another planet. A caste system would inevitably be created—probably the geneticists could help us here by creating superior specimens to order—" he smiled with brief irony, continued: "The great masses of people would expect your starships to transport them to new worlds where they could begin new lives, free of Earth. And demand genetic assistance for those who needed it, or for their offspring—the result would be protests, riots, uprisings." Kobryn shook his head. "We cannot permit it. I am truly sorry."

Frederick sat down.

"Besides," Kori said to him, "they get to spend the money we were using on themselves."

Professor DeVreis was up again. "Minister Kobryn, you have sentenced several thousand men, women and children to permanent exile. We naturally reject this decision in its entirety. It is completely antithetical to the spirit of the world government and the liberty of mankind. We demand a fair and open hearing before the Council of Ministers, the Assembly and the World Court."

Kobryn's face hardened. His giant image loomed over the frail old man. "You do not understand. The decision has been made. It is final. There is no appeal. We will

begin transporting you to the orbital station tomorrow."

The viewscreen went blank.

X

BY mid-afternoon of the next day a dozen men and their families had been taken from the villa by silent men in unmarked uniforms. The Kaufmans and the Sutherlands were the first to go.

Lou Christopher wandered through the villa aimlessly. Everybody seemed to be in shock. People huddled in small groups—individual families mostly—talking in low and frightened tones. Lou felt a complete outsider. He had no family, not even his girl.

Again and again a shining black minibus would pull up the driveway and two men would get out. Unsmilingly they would go through the rambling old house until they found the person they were looking for. A few moments of conversation—and a family would follow the men to the driveway. Wide-eyed and shaken, they would be bundled into the minibus and taken away.

Lou stood on the balcony above the main entrance and watched one of the buses grind away on the driveway, swaying topheavily, kicking dust as it swung to the road and gained speed. There had been a shower the evening before, but the land was bone-dry again this afternoon. The sky above was

bright but on the sea horizon black clouds were building again.

A sleek little turbocar was coming toward the villa, top down, two men in the front seat. It swung into the driveway in a flurry of dust and screeching wheels.

Sitting next to the driver was the Norseman. He looked up and waved.

"Very cooperative of you to be waiting for us," he called to Lou. "Will you join us, please?"

Lou had a sense of unutterable defeat. *It's my turn now...*

"Mr. Christopher," the Norseman said, "you won't try anything foolish, I hope."

Without a word, Lou went inside to find the stairs to the front hall. He left the villa blindly.

The sky was rapidly filling with thunderheads. The afternoon sunlight had a threatening, electrical yellow cast. A damp sweet smell in the air portended storm. Sitting in the back seat of the convertible was cool and exhilarating. The wind was clean and strong, tearing at hair and clothes. The car soon left the dusty coast road for a broad plastisteel throughway. For many miles the convertible was the only car on the road, but gradually traffic increased. The towers of a city rose among distant hills and big trailer trucks were streaking toward them on air-cushion jets.

Lou knew better than to ask questions. At this speed, conversa-

tion between the back and front seats was next to impossible anyhow. He sat and watched the clouds cancel out the sunshine.

Take a good look, he told himself. It's probably the last time you'll ever see any of this—or feel any of it . . .

The convertible, still open, threaded through a maze of elevated highways at the city's outskirts and dove into a tunnel as the first big drops of rain splattered Lou's bare legs. The tunnel must have had acoustic insulation of some sort—the roar of the car's turbine didn't echo and thunder as it would have in the average tunnel. In an underground garage the Norseman left his scat and beckoned Lou to follow.

He led Lou into the building. An elevator waited with its door open, at the end of a hallway. Lou's guide was watching him warily. He let Lou precede him into the elevator. Then he walked in, flicked a finger at the top button on the control panel.

On the vertical upward trip, the Norseman relaxed somewhat. He said to Lou, "I understand that you people are being moved to a satellite."

"We're being exiled," Lou said. His anger returned.

"Yes, so I heard."

"For life."

The Norseman nodded.

"Whole families. Several thousand people."

"I know—I'm sorry."

"Did you know when you brought me here from the States?"

The Norseman shook his head.

"Would it have made any difference to you if you had known what they were going to do with us?"

The Norseman looked at Lou. "I was doing my job."

"Would it have made any difference?" Lou insisted.

"Well—no, I don't suppose it would have."

"Then don't tell me you're sorry."

"But—"

"Stuff it."

The elevator stopped and the doors slid open. Lou had expected a corridor. Instead he stepped directly into a huge and sumptuous room, furnished with thick red carpeting and a long conference table surrounded by tall comfortable chairs in the rich brown color of real wood. Two of the walls were cream-white, a third was splashed with an abstract mural. The far end of the room was plastiglass but all Lou could see through the windows was mist and the streak of raindrops. A massive desk stood near the windows, its black leather swivel chair unoccupied at the moment. The air was cool and clean. The room seemed to smell of authority and power.

"You will wait here," the Norseman said.

He had not left the elevator. The doors slid shut with a soft sigh.

LOU walked across the big room to the windows. His steps made no sound on the luxurious carpet. The rain was coming down so hard now that the city was only a blurred gray outline.

He heard a door open, turned and saw a smiling, middle-aged man, shorter than himself and stocky. The man's hair was thick and dark, although his hairline had started to recede. He wore a business suit.

"Mr. Christopher, a pleasure to meet you," he said, gesturing toward one of the plush chairs by the desk.

He spoke with an accent. Lou had the feeling that he had seen this man before—on Tri-V newscasts, perhaps.

"My name is Rolf Bernard," he said, taking the chair behind the desk. "That probably means nothing to you. The Finance Ministry is often behind the news but seldom in it."

"Of course," Lou said. "The Minister of Finance."

Bernard smiled. "My name registered with you? I am flattered."

Lou said nothing.

"Yes. You are wondering why you are here. It is very simple. Not everyone in the Council of Ministers is a monster, Mr. Christopher. The decision to exile

you and your colleagues was not unanimous, I assure you."

"So?"

"Mr. Christopher, I will come directly to the point. There is nothing I can do to save your friends from exile. Even as Minister of Finance I am powerless to stop this cruel and degrading action." He hesitated, then added; "At this time."

Lou tensed. "What do you mean?"

"I am totally against this decision to exile the geneticists," Bernard said, his voice firm. "A few others on the Council of Ministers agree with me. We lack sufficient power to reverse the decision of the Council—but we will not sit by idly and watch what is being done to you and your colleagues without taking steps to correct the situation."

"What steps?"

"No one is certain of anything at this point. Except for this: a few of us will work together to free your comrades. As for concrete action, I am prepared to offer you an escape from exile."

"Escape?"

"Reprieve, parole, whatever word you wish to use."

"Why me?"

You are neither a geneticist nor a biochemist. I can take . . . eh, certain action, that will remove your name from the list of those to be exiled."

"How—"

Bernard stopped him with an up-thrust hand. "Never mind now. Believe me when I say that it can be done. You need not be exiled to the satellite station. There are a few others, also, whom I can slip out of the lists and save."

"But the geneticists?"

Shaking his head sadly, "Nothing can be done to save them at present. Rest assured, they will be comfortable enough in the satellite. Physically, at least. And also be assured that powerful men, myself included, will be working night and day to rescue them and return them to their rightful places on Earth."

Lou sank back in his chair.

"All right. What's the rest?"

Bernard said, "You realize, of course, that although your Institute has been permanently closed, as have all the leading genetics laboratories around the world, there are still plenty of geneticists and biochemists, plenty of working laboratories, left on our planet. Only the best people, the leaders—the elite—have been exiled. In this manner, the government hopes to stifle the progress of your science."

"In the name of stability."

"Yes. So you must understand that the government will not allow you to begin work at any of the genetics laboratories that have been left open. If it learns that you are working this field, they may kill you."

"Am I expected to comment?"

The big smile returned. "No—only to hear me out. I have taken the liberty of starting a small genetics laboratory of my own—safely tucked away from prying eyes. You and several others whom I am able to save from exile can work there. I will try to bring some of the best geneticists and biochemists available to work with you. They will not be leaders of their fields, of course, but they will be the best of those who have escaped banishment. Your work can go on while we try to end the exile of your friends."

Lou said slowly, "After all that's happened over the past few days it's—well, meeting a sane man in the government is a jolt."

Bernard laughed. "There are many of us. And it is not so much that we are sane; we are unafraid. Some others on the Council fear your science. They seek safety in stability and order. I welcome change. I welcome your science. Without progress the world will sink into barbarism."

For the first time since he had landed his glider, Lou felt himself really relaxing. He grinned at Bernard.

"You don't know how important those words are."

"I can guess. I have also taken the liberty of bringing some of the equipment and animal stock from various laboratories to my new location. I understand one of

your animals is a gorilla that can talk. Absolutely marvelous!"

"Big George," Lou murmured. "He's all right?"

"Yes, the gorilla is healthy." Bernard seemed amused, "Apparently he was asking for you."

Lou nodded. "He would be. I promised I'd go back for him."

"Did you? Well, you will meet him again. "Now, you must realize that my laboratory is a private, even a secret affair. None of the other Ministers knows about it. It's on an island—and once you are safely there you will not be allowed to leave. Until, that is, the entire business of the exile is settled."

"But why secret?" Lou asked. "Why don't you tell the world about the exile? Why keep everything hushed up? Why not blow this thing wide open and see what happens?"

"My dear young friend, the answer to that is not as simple as you might think. The stakes we play for are high. If we make the smallest mistake, we will lose everything. You must trust me to do what is best. At the proper time the world will learn what has happened, I assure you. But that is time we must gain."

"Okay, I guess you know more about this than I do."

"Fine." Bernard beamed again. "Now is there anything you will need especially to continue your work? We have already dis-

mantled your computer and are bringing it to the new laboratory."

"There's a computer programmer—Bonnie Sterne. She—"

"You want her at the new laboratory?"

"Yes, but she's not one of the exiles. She's in Albuquerque. And she might not want to come."

Bernard waved his objections away. "She will come. I know women a little better than you do. If we tell her that you are safe and want her to be with you, she will come."

Lou felt as if his mind were somehow stuck in neutral gear as he left Bernard's office. The Norseman met him at the elevator again and guided him back to the waiting car.

As he sat in the back seat of the car, driving through the chilling late afternoon rain, he told himself that he should feel happy. At least Bernard was on his side, on the side of justice and reason.

Okay, so living on this island will be an exile of sorts, too. But at least I'll be working and Bonnie'll be there. What more could I want?

But Lou didn't feel happy at all, just vaguely uneasy and wary. He realized that he didn't have the faintest idea of where the Norseman was taking him.

XI

THE laboratory was on a Pacific island, Lou guessed from the

number of orientals around the place. Most of the office people were Chinese or Malay. Half the computer programmers were Japanese.

Lou had been flown in the same day he talked to Bernard. Anton Kori had been on the plane with him, the only other passenger. Most of the trip had been made at night—neither Kori nor Lou could tell where they had been going, except that they had been heading roughly southeast when the sun had set. The crew—two Arabic-looking pilots and a black engineer—had not spoken to them.

Lou and Kori had been separated at landing. A Chinese of about Lou's own age had driven Lou in an open-topped turbowagon from the jet landing pad along a narrow road that seemed to have been cut into a jungle. He had pulled up at a plastic prefab dormitory building and had shown Lou to a room on the ground floor. Not much furniture, but the bed was comfortable and Lou had fallen asleep before he had even taken off his shoes.

Breakfast had been brought to him by the same Chinese the next morning.

"The director of the laboratory asked me to convey his greetings to you," he had said. "He requests that you enjoy yourself this morning in any way you desire. He will meet you here for lunch. At noon precisely."

Lou had glanced at his wrist-watch.

"I took the liberty of setting it correctly for you."

Looking up sharply at him, Lou had asked, "While I was asleep?"

The Chinese had nodded, with the faintest trace of a smile on his otherwise impassive face.

Lou spent the morning walking around the island. It was small: no more than a half-dozen kilometers long, and half that wide. It was really nothing more than a pair of heavily wooded hills poking out of the water. The trees were palms and other tropical species that Lou couldn't identify.

The sun was hot but the ocean breeze was beautiful. White sand beaches ringed the island and a coral reef farther out broke the surf, leaving a small inlet at one end. Lou saw a fair-sized air cushion ship resting in the gentle swells of the inlet. There was a dock and a few plain white buildings. Slightly away from the buildings was the jet landing pad, an adequate strip of well-kept grass. The plane was gone now. There was no runway for bigger jets anywhere on the island; the vertical landing and takeoff craft were the only planes that could come to the island and leave.

The dormitory building was at the opposite end of the island, connected to the inlet by the single road through the trees. In the middle of the island, set into the fairly

flat area between the two hills, were the laboratory buildings.

The labs were tucked away in the shade of tall trees. There were six buildings in all, filled with the bustling, nearly frantic action of men unpacking huge crates of equipment and working hard to set them up as quickly as possible. Their shouting and hammering drove Lou away very quickly. He only stayed long enough to make certain that they weren't damaging the equipment they were handling. They weren't. They knew what they were doing.

And then, as he passed between two of the labs, Lou heard a scratchy hoarse voice calling, "Uncle Lou—"

He looked up and saw Big George standing erect, his huge arms upraised so that his hands rested on the top of the nine-foot wire screen fence that stood between them. The fence bulged dangerously under his weight.

"Hey, Georgy!" Lou felt his face stretch into its biggest smile in days as he ran toward the fence.

The gorilla jumped up and down and slapped his sides with excitement. "Uncle Lou! Uncle Lou!"

"Georgy, you okay?" Lou asked as he reached the fence.

"Yes, yes. Strangers scared me at first, but they are very nice to me. It was lonesome, though, without you or any of my other friends."

"Well, I'm here now. Every-

thing's going to be okay, Georgy. Come on down to that gate over there and I'll get you out of this compound."

Big George lumbered along the fence, knuckles on the ground. Lou saw that the gate had no lock on it, just a simple latch. He opened it.

George lurched out and grabbed Lou in his immense arms.

"Hey—careful!" Lou laughed as George lifted him off his feet, strong enough to crush him, gentle enough to handle an equal amount of nitroglycerin without danger.

Lou pounded the gorilla's hairy shoulders happily. The warmth of his body, even his scent, carried the impression of huge jungle strength. And if the gorilla could have laughed or even smiled, he would have right then.

A pistol shot cracked nearby. Startled, George jerked and nearly let Lou fall. Lou saw sudden fear in the gorilla's eyes, then turned to see some sort of uniformed guard pointing a pistol at them.

"Stop—put that man down!" the guard yelled.

"Shut up," Lou snapped. "And put that stupid gun away. We're old friends. He's not hurting me."

The guard's mouth dropped open.

"Let me down," Lou said softly to George. The gorilla stood him carefully on his feet.

Walking to the wide-eyed guard, Lou said, "Put that gun away and don't let me catch you doing any-

thing that hurts that gorilla or frightens him in any way. Do you understand?"

"I—I thought—"

"You thought wrong. Big George wouldn't hurt anybody—unless they scared him so badly that he lashed out in fright."

"I was only—"

"You were wrong. Now get out of here."

"Yes, sir." The guard turned and walked away.

Lou stayed with Big George until lunchtime—but inside the relative safety of the wire screen that marked off the gorilla's compound. *Too many people out there who've been frightened by bad movies. And too many guns.* The compound was wide and wild, Lou saw. George had plenty of room, big trees, a stream, even the slope of one of the hills to climb.

"You'd better stay inside," Lou said as he left the gorilla at the gate, "until the people around here get to know you better. I wouldn't want you to get into trouble."

"I know," George whispered. "I'll be good."

Lou smiled at him. "Sure you will. I'll see you soon."

HE WALKED briskly back toward his quarters, knowing that George would spend the better part of the afternoon feeding himself. To keep him satisfied took a huge supply of fruits and vegetables. By the time Lou approach-

ed the white prefab building, he felt sweaty and uncomfortable. The day was beginning to heat up and the breeze had slackened.

A turbowagon was sitting in front of the dorm. Its driver wore the same sort of uniform the gun-waving guard had worn. The driver also was armed.

In the back seat an older man was reading some papers. His face was mild and milky white, with a high balding forehead and thin sandy hair that had started to turn gray.

He looked up as Lou's sandals crunched on the gravel.

"Ah—Mr. Christopher."

Lou nodded and put on a smile as he walked up to the wagon.

"I'm Donald Marcus, the head of the laboratory." Marcus put out a hand and Lou shook it. The grip was limp, almost slippery.

"Get in and we'll go down to the lab area. I want you to see the computer setup before we have lunch."

Lou climbed up into the wagon and sat beside his new boss.

"By the way," Marcus said as they drove off, "did you know that you're three minutes late?"

Without even blinking, Lou snapped back, "My guard must have set my watch wrong."

Marcus looked a little startled but said nothing.

The computer was housed in a building of its own to one side of the lab complex and not far from Big George's compound.

Inside the one-story building chaos prevailed. Workmen were uncrating bulky consoles, ripping off the protective plastic coverings, leaving huge gobs of spongy foam heaped all over the floor. Carpenters were putting up partitions with drills and power saws. Someone was pounding on a wall. Everyone was talking, calling back and forth, shouting orders or responses, mostly in singsong Chinese. Lou was nearly run down by four men who, with backs bent and heads down, were wheeling in the massive main control desk at breakneck speed from the open double doors at one end of the building.

The room was hot and sticky and smelled of new plastic and machine oil. Lou felt perspiration trickling down his body.

"Most of these components," Marcus yelled over the din, "come from your computer system at the Genetics Institute."

Lou nodded but kept his eyes on the nearest workmen, who were busily laying a heavy cable across the floor.

"We brought the logic circuits and the whole memory bank."

"What about the voice circuits and input software?" Lou shouted.

Marcus lowered his voice a notch. "Um, we didn't bring the voice circuits or the vocal input units. You'll have to type your inputs to the computer and get the

replies on the viewscreen or printer, just as with any ordinary machine."

"Why? How come?"

Marcus avoided Lou's eyes. "Well, we didn't have the time or the transportation capacity to take everything. Besides—" his voice dropped to a whisper—"with all these Asians around as workmen and technicians, if they heard a computer talk they'd probably be scared out of their skulls. They'd think it was devils or something supernatural."

Lou stared at him. "You're kidding."

Marcus stopped him with an upraised hand. "No, I'm serious. Sure, we have some good people on the technical staff, but the hired hands are straight from the hill country, believe me. My own driver—he's a great mechanic, don't get me wrong. But he keeps some powdered bones in a bag around his neck. Claims they keep evil spirits away."

When they went outside and entered the car, Lou took a careful look. Sure enough, the driver had a thin leather thong around his neck, and a tiny bag hung at the end of it.

They had lunch on the veranda of Marcus' quarters, a house made of real stone and wood, with a red tile roof that overhung the walls by several feet and made welcome shade against the heat of the sun. The house was atop the hill that overlooked the little blue-water in-

let, and the breeze from the ocean made the veranda pleasant. Lou leaned back in a wicker chair, watching the moisture beading on the outside of his iced drink, listening to the songbirds in the flowering bushes that surrounded the house.

"A month ago," Marcus was saying, "this was the only house on the island. By the end of this week we'll have more than a hundred people here—twenty of them scientists like yourself."

"I'm not a scientist," Lou said automatically. "I'm a computer engineer."

Marcus smiled wanly. "Yes, I know. But anybody who understands this genetics business looks like a scientist to me. I'm a civil engineer by training. Right now I guess I'm a straw boss."

The young Malay driver served them lunch on a round bamboo table, his little bag of magic dangling between Lou and Marcus whenever he bent over to put something on the table.

"Minister Bernard's plan," Marcus said as they ate, "is to carry on the work that was going on at the top genetics labs."

Lou shook his head. "Twenty men can't do the work of two thousand. Especially when those two thousand were the best in their fields."

Marcus chewed thoughtfully. He swallowed and said, "I know it won't be easy. We've brought some

good people here— but you're perfectly right, they're not the best. And we couldn't even bring too many of them without the government's catching on to what we're trying to do."

"Just what *are* you trying to do?"

"Exactly what I told you," Marcus said, concentrating his gaze on a leaf of salad that was eluding his fork. "We're going to continue the work you were doing at the Institute. We're going to complete it and show the world that we can alter a human embryo deliberately and safely."

Once we've announced that news, and told the people that the government tried to prevent this work from being completed, the government will have to relent and allow your friends to return to their homes and their work."

Lou felt an old excitement tingling through his body. "The next step in evolution," he said softly. "Man's conscious improvement of his own mind and body."

Marcus leaned back in his chair. "It's criminal," Lou flared, "for the government to stop this work. In a generation or two we could be turning out people who are physically and mentally perfect."

Smiling, Marcus said, "Yes, we can. And we will, if you can do your part in this job. You realize, don't you, that you're the most important human being on Earth?"

LOU stared at Marcus, who was smiling easily at him.

"What are you talking about?"

"It's very simple," Marcus explained. "All of the world's top geneticists and biochemists have been sent into exile. They're being shipped to their satellite prison right now. Of all the top men working on genetic engineering, you're the only one we've been able to save."

"But—"

"Oh, we've rounded up a few of the second-string people and we've brought in a couple of young pups, bright boys, but the ink is still wet on their diplomas. You're the only experienced top-flight man we have."

"But I'm a computer engineer."

"Maybe, but your work is the key to the whole project. You have the computer to handle all the thousands of variables involved in tinkering with the genes, we don't dare try anything. It would be too dangerous."

Lou agreed, "Yes—you have to have the computer plot out all the possible side effects of any change you make. Otherwise you wouldn't know for several lifetimes if you were making the zygote better or worse."

Marcus said, "And you're the only man who was close enough to the geneticists to understand their computer coding system. We've

checked all over the world, believe me. None of the other labs were as close to success as your Institute. And none of them had a computer system as sophisticated as yours. So that makes you the key man. The fate of your friends—the fate of the whole world—is in your hands."

Lou said, "Well—it's really in Ramo's hands. Ramo has the whole thing wrapped up in his memory banks."

Marcus tensed in his chair. "The whole thing?"

Lou nodded. "All I have to do is run through the programs and debug them. Then we'll be ready for the first experiments. Take me a few weeks at most."

"This is critically important to us," Marcus said. "I don't want you to rush it. I want it done right."

Feeling a little irritated, Lou said, "The programing was all but finished when we were interrupted. In a few weeks we'll be ready."

"You'll be able to scan the zygote's genetic structure, spot any defects, plot out the proper corrective steps, and predict the results?"

"To twenty decimal places. And all done in less than a minute of computer time."

"If you can do that—"

"*When* we can do that," Lou corrected, "we'll be able to mend any genetic defects in the zygote

and make each embryo genetically perfect. Ultimately we'll be able to produce a race of people with no physical defects and an intelligence level well beyond the genius class."

"Yes," Marcus said. "Ultimately."

Lou sat back, Marcus smiled pleasantly and sipped his drink. Presently Lou noticed, through the chirping of the songbirds, the drone of a jet high overhead. Marcus heard it too. He looked up at the silvery speck with its pencil-thin line of white contrail speeding behind it.

Glancing down at his wrist-watch, Marcus said, "That's our next supply shipment. Your programmer friend should be on that plane."

"Bonnie?"

Marcus grinned at Lou. "I understand she's a lovely girl."

Pushing his chair from the table, Lou stood up. "I'll meet her at the landing pad."

"Sure, go right ahead. Her quarters are in the same building as yours. She's on the second floor."

"Okay. Fine." Lou started toward the front of the house. Suddenly he didn't want to be bothered by Marcus or anyone else. He wanted to see Bonnie.

"I'm afraid the car's already down there," Marcus said, trailing behind Lou. "You'll have to walk it."

"That's okay. See you later."

He left Marcus standing in front of the house and started down the dirt road toward the harbor area. The jet sounded closer now. Lou could see it circling, still high over the sea.

From behind him he heard the whine of another turbo-wagon. Turning, he saw Kori jouncing in the back seat as the wagon slowly worked the rutted road to the harbor. Lou waved and Kori yelled for the driver to stop. They lurched off together toward the landing pad.

"Going to meet the plane?" Lou asked.

"Yes. They're bringing some equipment for me. And some data tapes from *Starfarer* that came in just before I was arrested."

"The interstellar probe?"

The road leveled and the car picked up speed. A stand of tall palms made light and shadows flicker across Kori's face.

"Yes. If everything happened to be working right, these tapes might have close-up pictures of Alpha Centauri on them."

"Really? I didn't see anything in the newscasts about it—"

The road wound along the edge of the harbor and the driver pushed the turbine to top speed. There was no other traffic. The wind tore at Kori and Lou in the back seat.

"The government kept it quiet," Kori hollered back. "Remember what Kobryn said, back in Sicily?"

Alpha Centauri is a threat to the stability of the world." Kori laughed bitterly.

The car screeched to a halt alongside the landing pad. Billowing dust enveloped it for a moment. Blinking and coughing, the two jumped out of the car.

"Are you going to work on the probe data? Is that what Marcus wants you to do?"

Kori made a little shrug. "He said I can work on analyzing the data. But what he really wants me to do is make nuclear explosives for him."

"Explosives? You mean bombs?"

"Nothing so big," Kori answered, grinning. "Little things. Toys, really. The kind that engineers use on construction jobs. Why, if you exploded one of them in a city, it would hardly take out a building."

The plane was circling low, its jets roaring. Lou watched as its wings spread straight for landing and the jet pods swiveled to vertical. Slowly the plane settled.

The hatch of the jet popped open, and a three-step metal ladder slid to the ground. A broad-shouldered young man stepped out, turned and reached up to help the next passenger. She was Bonnie.

She was wearing shorts and a sleeveless blouse. Her hair was pinned up the way she usually wore it at work. Her face was ut-

terly serious, perhaps a little scared.

Lou felt something jump inside him and then he was running toward her, calling her name.

She saw him and smiled. Lou ran past the man who had helped her down the steps. He wrapped her in his arms and swung her off her feet.

"Am I glad to see you! You came! You did come."

She looked surprised and happy and worried, all at the same time. "Lou—you're all right? They didn't hurt you?"

"I'm fine—now that you're here."

He took Bonnie's travelbag from the Chinese guard who was unloading the baggage and started walking her toward the car. Kori was still standing beside the wagon.

Lou introduced him.

Kori said, "Why don't you two drive back to the dormitory? I'm sure you'll want to get unpacked and settled in your room, Miss Sterne. It'll be some time before all my junk is unloaded from the plane. Lou, if you'll just send the car back here—"

"Fine, I'll do that."

Bonnie was quiet as they drove away from the harbor. By the time Lou had carried her travelbag to the door of her room his joy at seeing her had simmered down.

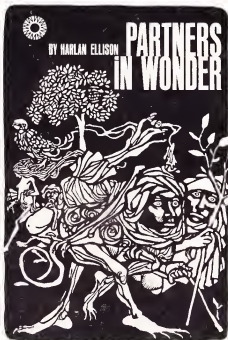
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